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THE PRINCIPLES

OF

SOUND AND INFLEXION

KING AND COOKSON

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THE PRINCIPLES OF
SOUND AND INFLEXION
AS ILLUSTRATED IN THE
GREEK AND LATIN LANGUAGES

BY

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1888

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FREDERICO W. WALKER, A.M.

SCHOLAE PAVLINAE MAGISTRO PRIMARIO

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CHRISTOPHORVS COOKSON

PREFACE.

MUCH progress has been made of late years in the comparative study of the Greek and Latin languages which is not adequately represented in English text-books. Accordingly, at the suggestion of the High Master of St. Paul's School, and encouraged by the advice of so great an authority, we have endeavoured to summarise the results of recent research in this subject. It has been our aim to give a clear statement of the laws under which the changes of sound may be grouped and to furnish the necessary illustration of those changes within the limits of ancient Greek and Latin. We have throughout attempted to distinguish between those results which may be regarded as certain, and those which are only probable. In the second part of the book, which deals with the morphology of Greek and Latin, we are sensible that much still remains to be learnt, and that some of the laws and explanations there stated must be taken as representing the stage which the inquiry has now reached rather than as being completely certain. This is especially the case with Latin morphology.

We have in great part followed the plan, and embodied much of the material of the articles of Brugmann and Stolz in Iwan Müller's *Handbuch der klassischen Alterthumswissenchaft.* The larger work of Brugmann, *Grundriss der vergleichenden Grammatik*, appeared too late for us to use it to full advantage, but we have, wherever possible, consulted it. We are also greatly indebted to the articles and publications of Collitz, Havet, Hübschmann, Osthoff, Schmidt, and Wackernagel, and especially to De Saussure's remarkable work *Le système primitif des voyelles indoeuropéennes.* Of English books we have made full use of Mr. Monro's *Homeric Grammar*, which marks an era in the study of Greek Grammar in England, and of Dr. Rutherford's *New Phrynichus*, and have consulted with advantage Mr. Sweet's *Handbook of Phonetics*, and Mr. Wharton's *Etyma Graeca.* We are also much indebted to Mr. Maurice Bloomfield's articles in the *American Journal of Philology.*

Our best thanks are due to the Rector of Lincoln for his valuable help in the labour of correcting the proofs, as well as to other friends who have in different ways assisted us. In compiling the indexes we have received much help from our old pupils, Messrs. Alexander and Hall, of Trinity, and Mulvany, of Magdalen. Above all we desire most gratefully to express our deep sense of obligation to the Provost of Oriel, who has so generously given us his time in reading and correcting our MS. and proof, and whose learning has enriched the book with many valuable suggestions.

J. E. K.
C. C.

AUTHORITIES.

We subjoin a list of the Works which we have most frequently consulted, and the Editions employed, to which are prefixed the abbreviations used in the text.

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ERRATA.

Page 21, l. 14, for *rad* read *rád*

„ 27, l. 5 from bottom, read ‘Indo-European stock (Hübschmann, *K. Z.* xxiii. 5).’

„ 50, l. 1, for ‘aspirated *Mediae*’ read ‘*aspirated Mediae*’

„ 96, l. 28, for *ϝι-ϝάχ-η* read *ϝιϝαχή*

„ 136, l. 4 from bottom, for *ŏj-ijan-* read *oj-īyan-*

„ 148, l. 19, dele ‘*ὕδωρ* for **σϝέδωρ*,’

„ 149, l. 20, dele ‘*rutilus* is for **rud-tilus*.’

„ 159, l. 10, for *ἡμι-* read *ἡμι-*

„ 255, l. 31, for *brother* read *brôþar*

„ 256, l. 18, for *bind-en* read *bind-an*

„ 257, l. 30, dele O. H. G.

„ 258, l. 9, for *p* read *f*.

„ 258, l. 31, for *cweðan*, *cwæð*, *cwǽðon*, *cweden* read *cveðen*, *cvæð*, *cvǽdon*, *cveden*.

„ 259, l. 2, for *scriðan* read *scrīðan*

„ 261, l. 13, for *nǽse* read *næs-*

„ 332, l. 16, read ‘*εἰδόσι* in place of an original *εἰδυσ-σι*

„ 333, l. 22, for ‘without’ read ‘with’

King and Cookson's Philology.

CHAPTER I.

INTRODUCTION.

Study of Language.

THE comparative study of language is one of the youngest of the sciences; it dates back in its origin no further than the second decade of this century. But its development during the sixty or seventy years of its existence has been quite disproportionate to its age. From all time, it is true, scholars have devoted themselves to philology in its widest sense, the study, that is, of language and of literature; but so long as Latin and Greek were exclusively the objects of enquiry, investigations into the nature of sounds and words were directed rather by individual taste than scientific method. Little light was thrown upon the mutual relations of different languages, and the field of observation was too narrow to permit of the framing of scientific inductions and universal laws.

It was the discovery of an Asiatic language unknown to Greece and Rome which not only gave an insight into the structure of the Greek and Latin languages, but linked them along with the dialects of Persia and Armenia and with the speech of German, Celt, and Slav as common members of the great Indo-European family. The aim of the comparative study of these languages is to trace the course of their development from a common origin in the parent language and to discover the laws of this development, both those which affect the body of language as a whole and those which operate within the narrower limits of subordinate groups.

Sanskrit.

Sanskrit became known towards the end of the last century, and however much in more recent times the science of language may have abandoned England to make its home in Germany, it is interesting to note that the first impulse to the study of this science came from the labours of two Englishmen, servants of the East India Company, Sir William Jones and Henry Thomas Colebrooke. The founders of the Asiatic

Society of Calcutta were the first to study Sanskrit literature and Sanskrit grammar for the benefit of Europe and to observe the connexion between this tongue and the kindred languages of Europe. They were struck by the resemblance between the vocabularies, as, for instance, in the words denoting parentage, the names of the parts of the body, of animals and numbers; by the similarity of grammatical organization, of the processes of derivation and composition, of case and person terminations. Sir W. Jones said in 1786, before the Society of Calcutta, that 'no philologist who had examined the three languages of Sanskrit, Greek, and Latin could fail to recognize that they were derived from some common source, which perhaps no longer existed.' Subsequently it was assumed that Sanskrit was the mother tongue, and the Hindus were looked upon as the ancestors of the nations of Europe. But Sanskrit cannot be regarded as the original language. The Zend or ancient Persian, which was afterwards discovered and which belongs to the same family, cannot be derived from Sanskrit, but must be referred along with it to a common origin. Sanskrit, it is true, has preserved forms more archaic than the corresponding forms of Latin and Greek, but it would be impossible to derive from Sanskrit many of the characteristic features of Greek and Latin verbal and nominal formation. Again, the treatment of sounds is often different, as is strikingly illustrated in the case of the palatals. Just as Latin is not derived from Greek, so Greek and Latin are not derived from Sanskrit. All three are closely related and sprang from the same parent stock.

mpara-e Study Lan-ages. So long as the field of study was limited to Greek and Latin alone it was impossible to distinguish with certainty the primitive from the later form. The discovery of Sanskrit provided the term of comparison so long required. To the ancient Greek all speech save his own was barbarous, and the idea of a common origin of language was alien to his mode of thought. Rome followed the example of her Greek teachers, and discerned no resemblance to Latin in the tongue of Celt and Teuton. When Christianity introduced the doctrine of a common humanity, the wish to explain the varieties of human speech gave the first impulse to the comparative study of language.

For a long time the belief inculcated by the early fathers prevailed, that Hebrew was the primitive language from which all others were derived, and to the support of this doctrine much time and industry were directed during the 17th and 18th centuries. Leibnitz was the first to point out that such a theory was as baseless as the contention of that citizen of Antwerp who maintained that Dutch was the language spoken in Paradise. Leibnitz, too, first applied the principle of sound inductive reasoning and called upon the students of language to begin, as in other sciences, with the known, before proceeding to the unknown. Indirectly, we can estimate the value of the discovery of Sanskrit by looking at the condition of classical philology when limited to its own resources at the beginning of this century. Hermann endeavoured to reform grammatical study, not by pursuing the comparative and historical method, but by an analysis of dialects, by a critical examination of ancient grammarians, and by the light of philosophy. To take an instance of the practical outcome of such a method, he regarded the ablative as a case of recent origin invented to ease the dative of its load. This new case fixed the limit of the possibilities of nominal declension, as was proved by arguments drawn from the nature of the human mind. But, in spite of *a priori* reasoning, the arrival of Sanskrit grammars in Europe showed that the old language of India possessed eight cases.

Grammar in Sanskrit and Greek.

The discovery of Sanskrit not only introduced order and classification into the study of grammatical phenomena; it increased in a remarkable degree the precision of observation by making known the works of a long line of ingenious and subtle grammarians. No doubt the study of language excited intense interest in ancient Greece, but Grammar was there the child of Logic, and analysis of the phenomena of speech was preceded by more general enquiries into the nature of thought and language. Much of the terminology of the Greek grammarian, the distinction between noun and verb, the terms of case, number, and gender were received from the hands of philosophers. The beginning of the critical study of language, in the modern sense of the term, was made in the schools of Alexandria and Pergamum ; it was however directed, not to a comparison of different languages, but to the study of the ancient dialects of Greece, and was chiefly based upon the recension of the text of the Homeric poems. Zenodotus, for instance, distinguished between the dual and plural numbers, discussed the use of the Homeric article, the meaning of words, the differences of dialects and constructions peculiar to poetry. A practical grammar was not written before the first century B.C., when Dionysius Thrax, a pupil of Aristarchus of Alexandria, produced one to aid in the teaching of Greek at Rome.

Grammar in ancient Greece was subordinated to philosophy, and hence the function rather than the form of words was the end to which this study was directed. Words were distinguished, not according to the nature of the elements of which they are composed, but according to the part they play in thought. Such studies have formed and always will form an important part of general philology, but are distinct from the endeavour to trace the descent of different languages from a common origin by a consideration of the nature and mutual relation of their sounds.

While in Greece Grammar sprang from the study of the Homeric poems, in India it sprang from the study of the Vedas, the sacred hymns of the Brahmans. In these poems everything was alike of equal importance; each articulation, each inflexion of sound was sacred, and hence came the minute attention and rigorous exactitude of the Indian grammarians. They invented a chemistry of language, flung its body as it were into the crucible, and decomposed it into its several elements. They noted the mutual influence of neighbouring sounds, and determined the relative length of different syllables, and thus provided that minute analysis of language which was wanting in Europe. The analysis of a word in Sanskrit is rendered far more easy than in the case of its

Greek or Latin equivalent, the distinction between root, suffix, and ending being more sharply defined. On the other hand, it is in syntax, in the arrangement and analysis of words combined in sentences, that the Greeks made such progress, and formed their language into an instrument of surpassing delicacy and subtlety in the expression of the finest shades of meaning, to which the Hindus can show no parallel. Both the Greek and Indian methods have their value in the study of philology, but the present work is concerned more with the form than the function of words and their elements, with the variation of their sounds rather than their changes of meaning, with their phonetic nature rather than their syntactical use.

Franz Bopp.

The labours of Sir W. Jones and Colebrooke and their fellow-workers amounted to no more than a clearing of the ground. The foundation of the modern science was laid by Franz Bopp (b. 1791), the author of the first comparative grammar. It is the merit of this famous scholar to have given a scientific proof of the previously hypothetical connexion of the most important members of the Indo-European family in his chief work, the Comparative Grammar of Sanskrit, Zend, Armenian, Greek, Latin, Lithuanian, Old Slav, Gothic, and German, first published in 1833. But it is not on this that he would himself have based his claims to recognition. His labours were mainly directed to the investigation of the origin of inflexion.

Views of Inflexion.

The view of inflexion which prevailed in Bopp's day was that there were two kinds of languages, those in which changes of meaning were signified by an inner modification of the root, and those in which, for the same purpose, different elements were added to the root. This theory is expressed by Friederich von Schlegel in his treatise on the language and literature of India. It had long been noticed that the modern languages of Europe are more analytic than the classical; that, as Bacon puts it, the modern languages 'slothfully express many things by prepositions and auxiliary verbs,' while 'the genius of former ages was more acute,' and employed changes of inflexion. Now to Schlegel inflexion was an inner modification of the root of a word. He admits that it may be possible that in Greek the syllables, which form the terminations of nouns and verbs in declension and conjugation, were originally distinct particles and auxiliaries. Of such amalgamation, however, he discerns no trace in the Indian language. Inflexion in Sanskrit was the change or transposition of primary radical sounds and 'not the merely mechanical process of annexing words or particles to the same lifeless and unproductive root.' The languages in which, as in Sanskrit, changes of meaning were distinguished by an inner modification of the root, were called *organic* languages, while to those in which different words or particles were affixed externally to the root, the term *mechanical* was applied. In the one the root was a living germ, in the other it was a lifeless atom. Such an account we must regard as vague and metaphorical, and as affording no real explanation. The truth is that Schlegel regarded Sanskrit as the parent language from which Greek and Latin were derived, and in regard to which they held almost the same relation as the Romance languages to Latin. Holding this theory, and believing that the tendency of later languages was to employ analytical forms of expression for the earlier inflexions, he regarded Greek as more analytic than Sanskrit, and French and Italian as more analytic than Latin. Bopp refused to accept Schlegel's view of inflexion, and put forward his own theory of Agglutination as the true explanation of the forms of inflexional languages.

p and legel.

In the Comparative Grammar (i. 225, § 108, of the French edition by M. Bréal, 1866) he discusses the theory of Schlegel. If inflexion means the interior modification of the root as opposed to the external addition of a syllable, what are we to say of the formation of *δίδω-μι, δώ-σω, δο-θησόμεθα* from the root *δω* or *δο*? What are *-μι, -σω, -θησομεθα*, if they are not external complements added to the root, which, if not invariable, is only subject to a change of quantity? We cannot regard *δο-θησόμεθα* as an internal modification of the root *δο*, neither can we trace any mark of relationship between *-μι*, *-σω*, *-θησομεθα*, and the roots to which these elements are joined. In view of these difficulties Bopp decides that Indo-European inflexions are not internal developments of the root[1], but elements with an independent value of their own, which do not belong to the root, but have come from the outside. He distinguishes three classes of languages.

Classification of Languages.

1. Languages like the Chinese, which are without true roots, without power of composition, and therefore without organism, without grammar.

2. Languages like the Indo-European family, where the roots are monosyllabic, but capable of combination with one another. The principle which underlies the formation of words in these languages is the combination of verbal and pronominal roots.

3. Lastly come the Semitic languages, with disyllabic verbal roots, in which the fundamental meaning is expressed by three necessary consonants. It is in these languages that grammatical forms are created, not only by composition, but also by internal modification of the root.

Bopp's theory of Agglutination.

Bopp thus did away with the previous distinction into organic and mechanical languages. His theory of the Indo-European languages as formulated included the distinction of verbal roots, from which come nouns and verbs, and pronominal (or, as they have been called, demonstrative) roots, a less numerous class, from which are derived pronouns, primitive prepositions, conjunctions, and particles. According to the theory of agglutination, the terminations of case and person were originally pronouns, e.g. the *-s* termination of the nom. sing. comes from the pronominal theme *sa* (§ 134), and in the second pers. sing. of the verb is to be found the pronominal theme *tva* (§ 443); in the *s* of the sigmatic aorist in Greek and of the Latin perfect is to be recognized the verb substantive (§ 543); the suffix *-aya-* of causatives comes from the root √*i*, to go, or √*ī*, to desire

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[1] Reduplication may be regarded as an internal development of the root, seeing that it is formed out of the resources of the root itself. So, too, changes in the vocalism of roots, in different nominal and verbal formations, which we distinguish as ablaut or vowel-gradation (*ch.* x), are internal modifications.

(§ 740); the root √*as*, to be, is found in *man-as*, *μένος* (§ 931), the root √*kar*, to make, in *volu-cer*, and the root √*tar*, to traverse, in *δο-τήρ* and *πλῆκ-τρον* (§ 815). An illustration of the length to which the theory of agglutination was pressed by Bopp's successors may be seen in the analysis of *βάθος* into the roots √*βα*, to go, √*θε*, to make, and √*ἐς*, to be, or again in the analysis of *λυθήσομαι* into (1) the root √*λυ*, to loose, (2) *θ*, the relic of √*θε* of *τίθημι*, (3) *η* representing √*ja*, to go, which comes in *εἶμι*, (4) *σο* from *ἔσομαι* the substantive verb, (5) *μαι* representing an oblique case of the first personal pronoun, and the whole signifying 'There will be (*σο*) a going (*η*) to make (*θ*) me (*μαι*) loose (*λυ*).' The one certainty in this triumph of ingenuity is that √*λυ* means 'loose.' It is also conceivable that *μαι* is to be connected with the stem of the personal pronoun. The rest is baseless and fantastic. Why should *θ* be referred to *τίθημι* or *η* to *εἶμι*?

A correct analysis of *λυθήσομαι* would recognize the root √*λυ*, which is common to all forms of the verb *λύω*, would distinguish *θη* as the characteristic suffix of the stem of the weak aorist passive *λυθη*, and would regard *σο* as the sign of the future, and *μαι* as the personal ending; *μαι*, as has been said, may be connected with the stem of the first personal pronoun, but *θη* and *σο* are suffixes upon whose origin we cannot pronounce with certainty. Were we in a position to trace the growth of the original language, we might perhaps be able to explain the force and trace the history of the different suffixes, but as things are, we have to deal with the derived languages which inherited those suffixes. An extreme instance of the agglutinative theory in Bopp's own hands is his identification of the augment with *a* privativum, by which *ἔλυσα* was thought to have come to mean 'I loosed once,' because it started with the meaning 'I am not loosing now.' Bopp's opponents naturally asked how it was possible to believe that when primitive man wished to say 'I have seen,' he said, 'I do not see now.'

Analogy of Physical Sciences.

To some extent in his comparison of different languages, Bopp employed the phraseology of the physical sciences.

Thus, in the preface to the Comparative Grammar, he says: 'I propose in this work to give a description of the organism of the different languages which are named in the title, to study their physical and mechanical laws, and to enquire into the origin of the forms which express grammatical relations.' To Schlegel, as we have seen, organic change had meant internal change in a word, as distinct from the mechanical change which was effected by external additions. To Bopp an organism was the arrangement which results from agglutination, that is, from the combination of different elements. The superiority of the Indo-European languages, as he points out (i. 230, § 108), consists 'in the close union which combines root and inflexion into an harmonious whole, comparable to an organized body.' Chinese is without organism and without grammar, but the power of combining monosyllabic roots gives the Indo-European languages an organism and a grammar. Still in the Sanskrit, Greek, and Latin languages, as we find them, this power of combination is dead; and consciousness of the meaning of each element of an agglutinative word has been gradually lost, and the original form altered in accordance with newer principles of euphony which have been subsequently developed. Consequently these languages are in a state of decay. Still further decay is to be found in the languages of modern Europe, where inflexion has fallen into comparative disuse and analytical modes of expression have taken the place of the old agglutinative forms.

Of the terms mechanical and physical law, as applied to language, Bopp has himself given an explanation in a note appended by M. Bréal to the preface of his translation: 'By mechanical laws I understand in general laws of gravity, and in particular the influence which the weight of the personal endings exercises upon the preceding syllable.' This he would illustrate, for instance, by the change of *a* to *i* in *cano*, *ce-cin-i*, and the reduction of the root in *ἴ-μεν* as compared with *εἶ-μι* of the singular. This last variation would be connected by modern philologians with the shifting of the accent. Bopp applies to it the language of statics.

Physical or Phonetic Laws.

Again, by the term physical laws 'Bopp designates the other rules of grammar, particularly phonetic laws. Thus, where in Sanskrit we find *at-ti* (he eats), in place of *ad-ti*, the change of *d* to *t* is caused by a phonetic law.'

These physical, or as we should style them phonetic, laws would not now be accepted as true scientific generalizations. As Delbrück says (*Study of Language*, p. 22), 'that vowels should be lengthened without cause, extensive mutilations take place without conceivable provocation (as, e. g. that ἐτύπην should be a mutilated form of ἐτύφθην), and that the same phonetic group should pass into widely differing formations in the same linguistic period, appears to Bopp not at all extraordinary.' The modern dictum that phonetic laws admit of no exception was foreign to Bopp's view, since according to him 'we must expect to find no laws in language which offer more resistance than the shores of rivers and seas' (*Vocalismus*, p. 15). In this branch of the subject Bopp was too much under the influence of preconceived notions as to the identity of words, to suit which he often distorted the facts of language, and turned his back on his own laws.

Jakob Grimm.

The next great name in the history of the science is that of Jakob Grimm (b. 1819), the founder of historical grammar. His labours were almost entirely directed to German philology, and therefore do not so much concern us here; but as the first to assert the importance of studying language in its natural condition rather than its literary form, he became the founder of a school of philologists, amongst whom we might mention Ahrens. But though not so much a comparative philologist primarily, he did inestimable service to the science in formulating the great law of consonantal change which still goes by his name, and in demonstrating the importance of a historical knowledge of the letters of different alphabets.

A. W. Pott.

A. W. Pott in his *Etymologische Forschungen* (1833–1836), became the founder of modern phonetics, and to him the great body of current etymologies is due. He was the first to construct comparative tables which covered the whole extent of the related families of speech, and to formulate the phonetic laws of the several languages.

August Schleicher.

Passing over those scholars who devoted themselves mainly to Sanskrit we come to August Schleicher (1821–1868). To him is due the classification of languages into isolating, agglutinative and inflexional. These three stages succeed one another chronologically, and it is in the last that a language reaches its full development (*Compendium*, p. 3). But the languages of which we have experience, that is, the modern languages of Europe, are not in a state of development but of decomposition. English and French are less perfectly inflexional than Greek and Latin. Schleicher accordingly argued that languages were formed in prehistoric times, and are destroyed in historic. Such a distinction between prehistoric and historic development can be no longer maintained. Like Bopp, Schleicher regarded language as an organism with a life of its own; as a botanist of mark he was influenced by the analogy of the natural sciences, and applied to the study of language the method of those natural sciences. But to say that language is an organism is only to employ a metaphor; the proper method of studying the phenomena of language is to trace the historical course of their development. Schleicher did great service by organising the results of previous inquiries and formulating phonetic laws. It is to him that many philologists look as the first to insist upon that regularity of phonetic laws, which is so marked a feature of modern inquiry (Collitz *B. B.* xi. 3). And in such a remark as 'the essence of inflexion lies in the vocalism,' he to some extent anticipates later theories of the ablaut or vowel-gradation.

The 'Ursprache.'

There is one new feature in Schleicher's system that demands special notice. He was the first to reconstruct the *Ursprache* or original Indo-European language. Previous scholars had been content to reduce the existing forms of one language to the corresponding existing forms of another related language. Schleicher was the first to go beyond this, and attempt to reproduce the primitive forms from which all the existing forms are derived.

As this reproduction of original forms is a common feature in more modern works, it may be well to ask what the value and what the certainty of such attempts may be.

Primitive Sounds.

The first difficulty that meets us in such attempts is the question how we can determine what is primitive and what is secondary. How many vowels had the original language? How many consonants? To these questions Schleicher returned an answer very different from that which would be given now. At the beginning of his *Compendium* he asserts the existence in the original speech of the following sounds—

Consonants,	Spirants	Vowels
k, *g*	*j*, *s*, *v*	*a*, *i*, *u*
p, *b*	*n*, *m*, *r*.	*aa*, *ai*, *au*.
t, *d*.		

To these, later but still in very early times, were added the aspirates *gh*, *dh*, *bh*, the liquid *l* and the diphthongs *āa*, *āi*, *āu*. The 'new school' of philologists would recognise the aspirates as primitive, add a second row of gutturals, and a series of semivowels, including the nasal and liquid sonants; *i* and *u* would cease to rank as vowels proper, and the original vowels would be given as *a*, *e*, *o*.

Value of reconstructions.

It may be asked what is the value of such attempted reconstructions, if they have a character so little permanent? The answer is, that as in astronomy the Copernican theory was a sufficient explanation of the phenomena under observation at the time, and was not necessarily a bad or useless hypothesis, because it first had to be modified by the theory of epicycles, and was finally superseded by the Newtonian theory, so the want of finality in any attempted reconstruction of the original language does not necessarily destroy the value of such reconstructions as a means of investigation. As the field of investigation widens, we must necessarily have some means of connecting the results of our enquiry in the several languages, and must make some attempt to decide what part of our material is original, and what part is independently developed in each language. No philologist would assert that he had restored the original language with any certainty except as regards a very small group of words, for the mere fact that the vocabulary common to all the related languages is excessively small makes any such assertion impossible. But if we accept the hypothesis that all languages of what we call the Indo-European family are eventually derived from some one primitive language, we are bound to show that the facts of the derived languages are consistent with this hypothesis, or else to modify the hypothesis in accordance with the facts. The original language is merely an 'ideal construction' expressing the views held at any one moment by scholars as to the extent and nature of the material hereditary in the derived languages. But because the expression changes it is not therefore valueless. The reconstructions of an animal from a single bone made by the palaeontologist may be modified or even superseded by subsequent discoveries, but nevertheless serve a temporary purpose, and hold good till the new discoveries are made.

Georg Curtius.

The last of the old school of philologists is Georg Curtius, who died in 1885. Under him the comparative science of language made great advances, and he is the scientific father of the younger school of continental philologists. He devoted much pains to tracing the chronological development of the different languages and forms, and his two great works on the Principles of Greek Etymology, and the Greek Verb, must remain in many points as standard authorities. But perhaps his most important contribution to the science was his theory of the splitting of the A-sound: not because the theory was sound in itself, but because it was the first attempt to upset the view of the vowels which had been unimpugned since the time of Bopp. The discovery that the E-sound was common to all European languages, and the referring of its origin to the period of a common European language were a great step in the right direction, and cleared the ground for the subsequent discoveries of Ascoli, Collitz, Fick, and Schmidt. These discoveries will be discussed at length further on in this book.

It now remains to give a short sketch of the new principles and new methods which, in the last fifteen or twenty years, have transformed the science.

ld and ew ethods.

The earlier investigators dealt too exclusively with the language on paper, and considered too little the men who spoke that language. Of the two factors which operate in producing changes in the material of a language, they emphasized the importance of one only. A physiological element—the principle of ease of articulation—is prominent in the writings of Curtius: the psychological factor—the influence of assimilation and analogy—is almost entirely ignored. And as these enquirers laid undue stress on the reconstruction of the original language, so they gave excessive weight to the oldest forms of the derived languages—e.g. in Sanskrit the Vedic, in Greek the Homeric dialect, as approaching in form nearest to the mother tongue. In formulating the laws of phonetic change they considered rather the relation of this hypothetical original speech to the forms supposed to be most nearly connected with it, than the relation of more modern forms to those languages with which they can be proved historically to be connected. But it is obvious that the laws of development in language cannot be derived *a priori* from an investigation of the connexion of the Homeric dialect, e. g. with a supposed pre-Homeric, pan-Hellenic language. Rather we must look to those languages whose development can be historically traced—at the modern and middle German dialects in their relation to the old German—at the Romance languages in their relation to the Latin. And there is this further advantage, that here we meet with a continuous series of records which give us the language as it was spoken, and we are not confined to the investigation of a fixed literary type. And in this investigation of the modern languages we are led to the assumption of the following two principles for the science of language as a whole.

Phonetic Laws.

I. Every phonetic change, so far as it is purely mechanical, is accomplished in obedience to universal laws, which admit of no exception. Every word in which the same sound appears under the same conditions is subject to the same phonetic change. Where a language is split into a variety of dialects, apparent exceptions will be found, as, for instance, in Greek ἴκκος, ἵππος : ποῦ, κοῦ.

Analogy.

II. The principle of Analogy, i. e. of the alteration of forms by their association with other forms connected with them grammatically or otherwise, plays an important part in modern languages. Just as fancy works in the extended association of the meaning of a word, so in the same way with the formation of new, or the change of old words, the process is affected by fancied resemblances or supposed analogies. The same principle is to be recognized as operating in all, even the most ancient periods of the history of language.

These are the two cardinal principles which distinguish the new from the older school of philologists. They are so important as to demand a more detailed discussion.

Theory of Phonetic Law.

1. First, as regards the theory of Phonetic Law. Bopp was content to say that Sanskrit *d* for example sometimes represented Greek δ, sometimes Greek θ, without any further investigation of the conditions by which the one or the other was determined. It is clear that from such a statement of the facts no true scientific generalizations are possible. Curtius made it his aim to establish, and was successful in establishing, more scientific views, but even he was content with mere approximations to universality. He saw no difficulty in holding that a phonetic change might take place in *some* cases only, under given conditions, while under the same conditions in other cases it might not occur; nor again in holding that a single language might represent the same original sound under the same conditions in different ways. In cases like τέγος beside στέγος, he would say that the σ had been dropped in the former word, not in the latter: in ἐχθαίρω he saw an epenthesis, which did not under the same conditions occur in ἐλευθέριος. Where he attempted explanations of exceptions they are not such as we can now acquiesce in. When he said that the intervocalic ι disappeared in ἵπποιο = ἵπποο = ἵππου, because the need of it as a special syntactic sign for the genitive was not felt, while it was kept in λέγοιεν because of its importance as a syntactic element, he implied

that such phonetic changes are conscious, and that the Greeks inherited from their forefathers not words and systems of inflexion in their entirety, but rather the elements of which words are composed, while the composition was their own individual work. And though he admitted that the intervocalic σ in ἔστησα is due to the analogy of ἔδειξα, etc., yet he would not have said that ἔστησα is a new formation on the analogy of ἔδειξα, but rather that the σ was arrested in the act of disappearing by the influence of this analogy.

Spoken Language and its changes.

We can hardly insist too much on the instability of a spoken language. The motions of the organs of speech in producing a given sound are in no two cases exactly the same even in the same individual. But the difference of sound in any two cases is so minute as to be imperceptible both to the speaker and the listener, and any undue divergence is prevented by the necessity under which the speaker lies of being intelligible to those whom he addresses. Any such change therefore as that from original *k* as we find it in Greek to the *h* which appears in Low German could only have been accomplished through a series of minute changes,

e. g. k— k_1 — k_2, etc.,— h,

and have been completed only in a community which had ceased to have intercourse with the original stock. It is inconceivable that in the same community the word corresponding to Latin *caput*, A. S. *heafod*, should have been pronounced by some people with an initial aspirate, by others with an initial guttural. But nevertheless when the change was completed it must have been universal, and all initial *k*'s must have become initial *h*'s. For the pronunciation of a language is not learnt by learning the pronunciation of all the words which it contains; rather where the same conditions are present, there is an impulse towards the same motions and adjustment of the vocal organs, and the same sound results. And though some members of the same community may have pronounced k_2, while others pronounced k_1, yet the difference between the two being infinitesimal, the speech of the community as a whole must at any one time have been homogeneous. Nothing more than this is meant by the universality of phonetic law, that is, an uniformity which we can prove historically to have existed within a definite area at a certain time.

Phonetic change unconscious.

We have already implied that phonetic change is unconscious. Conscious change would only occur where there was a necessity for distinguishing between two words which had a different signification, but were or had become identical in sound. When Curtius says that some sounds were maintained as specially significant, he implies that this significance, e.g. of optative -ι, was consciously felt by the Greeks, and that the tendency to drop the ι was consciously arrested. But as we do not suppose that in saying *j'aimerai* a modern Frenchman is conscious of the connexion of the termination with the Latin *habeo*, so we need not imagine that in using εἴη the ancient Greek felt that the special optative meaning lay in the ι. Again, when Curtius speaks of the maintenance of the σ in ἔστησα, he implies that the speakers consciously avoided a threatened change. The Greeks may never have said *ἔστηα, but this only means that in the prehistoric times, when intervocalic σ was disappearing, the analogy of ἔδειξα, etc., was already felt: the σ was not consciously arrested in the act of disappearing, but ἔστησα or rather ἔστᾱσα is a new formation which supplanted the phonetically accurate *ἔστηα. This is no exception to the phonetic law; the law has been crossed in the earliest times by the counter law of analogy. That the result of the analogy is to reproduce the primitive form is not an argument for ἔστησα being historically a survival. In late Greek we find the form φέρεσαι (2nd sing. mid.), but no one would suggest that this was a survival, though it happens to be identical with the prehistoric form.

Exceptions to Phonetic Law.

There are certain other considerations which we have to take account of in dealing with the so-called exceptions to phonetic laws. The graphic representation of sounds may be inexact; words phonetically identical may be written differently (e.g. Germ. *man*, *Mann*; *das*, *dasz*), or at a time when a change of pronunciation is in progress we may get a double graphic representation, the one being the traditional spelling which the literary language still preserves, the other representing the current pronunciation. This is especially the case with the Latin vowels. Again we have to consider the case of words borrowed from neighbouring dialects, which necessarily obey different phonetic laws; or the exceptions may be new forms which have come into existence after a phonetic law has ceased to be in operation. For instance, an original ā becomes in Attic η, but nevertheless we find in Attic τίμᾱς with a long ā, because at the time when ā became in Attic η, the acc. pl. still showed ᾰ as the final vowel of the stem of feminine words in this declension. The lengthening of the ᾰ to ā after the loss of the nasal was a later step, taken when the change from ā to η was already completed throughout the dialect. The short ᾰ of A-stems corresponds to the *o* of O-stems. Thus τιμᾰ-νς answers to ἱππο-νς: these in Attic appear as τίμας, ἵππους. Further, the exceptions may be due to a conflict of two laws. Thus the termination of the Greek 3rd sing. -τι becomes -σι between two vowels in δίδωσι, but is unchanged in ἐσ-τί because of the preceding σ.

Again, the same form under different conditions may have taken different shapes, and then either one of the two resulting forms disappears or both are used indifferently. Thus the *d* of *quod*—old French *qued*—was originally lost only before consonants, and in Greek εἰς (ἐνς) was once the form in use before vowels, ἐς before consonants.

Further, what appears to be a later 'splitting' of a sound may be an original distinction, as is now thought to be the case with the vowels *a*, *e*, *o*, which were formerly regarded as the results of a splitting of the *a*-sound.

Finally certain forms, e. g. reduplications, seem to have special phonetic laws—i. e., in these cases alone is found the combination which is the condition of the particular change. The law is special, but none the less universal in its own sphere.

And here we may notice that phonetic law is most fully in operation in what we may call the natural as opposed to the artificial state of a language. The artificial or literary form of a language is liable to corruption, not merely from the fact of borrowing from other literatures, but also from the influence of its grammatical system, from the wish, that is, to reduce to similarity of sound forms recognized as grammatically cognate; hence the appearance it presents is often one of extreme confusion. The spoken language of ordinary life is not subject to these influences, and is therefore more entirely under the domain of phonetic law. And though from the nature of things the 'natural state' of the greater number of Indo-European languages must be unknown to us, yet in dealing with the literary language we must not forget to make due allowances for those influences to which such a language is so specially subject.

After all this has been said, there will, of course, remain forms unexplained. But these we must look upon rather as problems than exceptions—results not of the nature of things, but of our own ignorance. There is a wide difference between acquiescing temporarily in an unexplained residuum and disguising our shortcomings with some such phrase as 'sporadic change.'

Analogy. We now come to the second great principle—Analogy. The important part played by this principle in the language of every-day life can scarcely be overrated. A very considerable proportion of the words we use we have never actually learnt, but rather formed in imitation of other forms we have heard or used previously. Memory is no doubt the most important agent in our speech, but association is hardly less important, especially in the young. Everyone must know how a child beginning to talk has one or two types by which it inflects all its verbs. And this principle of association is by no means inactive in adults, so that it is possible for us to use in conversation a word which we have never heard or seen, but which we form instinctively on the analogy of other words. Hence comes the possibility of the introduction of new forms which transgress the established usage, but unless this new form is spontaneously and simultaneously accepted by a majority of the speaking society, it will never be used to the exclusion of the old. Hence it often happens that the new form, which is the result of analogy, exists side by side with the form which is the result of phonetic law, e. g. Σωκράτην, side by side with Σωκράτη. Phonetic change is a revolutionary force in language, on the one hand destroying existing groups of words, on the other calling into existence new forms, and introducing apparently aimless distinctions into systems of closely related words. By this principle we say ἐστί but εἰμί, κεῖμαι but κέαται, *concutio* but *concussi*. Analogy is the reaction against this power—the restorative influence which brings back the lost harmony and symmetry of inflexion, and reasserts the principle that what is similar in meaning should also be similar in sound. It also leads to the creation of new on the model of old forms. A few instances from different languages may not be out of place; many others will be found in the body of this work.

In Greek we find ἐσ-μέν in place of εἰ-μεν, following the analogy of ἐστέ, ἐστί. The regular form is found in εἰ-μί for ἐσ-μί and εἶ-μαι for ἕσ-μαι, while the same εἶμαι appears as ἕσμαι in Homer (ω. 250) and in the Attic compound ἠμφίεσμαι. Side by side with κέαται Homer has κείαται upon the analogy of κεῖ-μαι.

Out of the resemblance of βεβαώς (βεβm̥Fώς) and ἑσταώς arose the perfect βέβᾱκα (βέβηκα) on the analogy of ἕστᾱκα, and in the same way from the resemblance of ἑσταώς and γεγαώς (γεγn̥Fώς) Pindar has formed a perfect γεγᾱκα in the infin. γεγάκειν (*Ol.* 6. 49), upon the same analogy.

A still more convincing instance is to be found in the present tense form δείδω. In Homer we have the perfect δείδια, 1st plural δείδιμεν, which appears in Attic as δέδια, δέδιμεν. The present stem answering to this perfect appears in the Homeric forms δίον, δίεσθαι (cf. Veitch s. v. δίω). The word δείδω, also an Epic form, appears only in the 1st pers. sing. and there is no imperfect. It is really a perfect; δείδω contracted from δειδοα for δειδοι̯α for δεδFοι̯α.

Other instances of analogy in Greek are ἐμοῦ beside μοῦ, on the analogy of ἐγώ, δουλεύω beside δοῦλος, on the analogy of πρεσβεύω beside πρεσβεύς.

In modern German we have *fliege*, *fliegst*, *fliegt* for *fliege*, *fleugst*, *fleugt*, where the second and third persons have been assimilated to the model of the first.

In French we find *aimons* (amámus), *aimez* (amátis) altered from **amons*, **amez* on the analogy of *aime* (ámo). (Cf. Brachet, *Historical French Gram.*, pp. 62, 77.)

In Anglo-Saxon we find *fót*, pl. *fét*, answering to modern English *foot*, *feet*, but for A. S. *bóc*, pl. *béc*, modern English shows *book*, *books*, following the analogy of such words as form the plural in *s*. The preterite of the A. S. verb *rídan* was in the singular *rád*, *ride*, *rad*, pl. *ridon*. Modern English has throughout *rode* (= *rád*).

In the verb *bid* we form an irregular preterite, *bad*, on the analogy of *sit*, pret. *sat*. But in *sit* A. S. *sittan* the *i* represents an original *e*, altered according to the A. S. rule of infection or umlaut through the influence of a succeeding *i*. Thus *sittan* is for **setjan*, and *a* is the regular vowel for the preterite of a present stem in *e*.

Sometimes, though more rarely, we see a connexion arise between two distinct forms as the result of pure phonetic change—forms which were originally distinct becoming coincident. Thus ὅς represents at once *su̯os* and *i̯os* ; εἶ, both *ἐσι, Epic ἐσ-σί and εἶσι. Germ. *laden* stands for O. H. G. *ladon* (to invite) and *hladan* (to load).

On the other hand, whether from a desire for intelligibility or under the influence of analogy, forms which would become coincident are differentiated. The gen. plur. of the O-declension in Latin is formed after the pronominal declension (*deōrum*), perhaps because the form *deum* would not be distinguishable from the acc. sing. The neuter ἑστός is used instead of ἑστώς (= ἑσταός) to avoid identity with the masc. ἑστώς (= ἑσταώς).

Analogy then, it has been said, is not to be considered as a fatal impulse to bar the road for the regular phonetic development of a language, but it works alongside of the merely mechanical force of memory as an important factor in the learning and practice of a language, affording an easier connexion between the earlier and later forms than would be given by memory alone; on the one hand producing, as against the disintegrating action of phonetic law, a connexion in sound between words connected in meaning, and on the other hand abolishing the meaningless identity of sound in forms that are distinct in function.

Analogy operative at all periods.

It has been objected to the recognition of Analogy as a principle operating at all times in language that analogical forms become more numerous the later we trace the records of a language; it is therefore argued that in the earlier stages such forms must be comparatively rare, and in the primitive language non-existent. But we cannot suppose the factors producing a change of language to have been different in early times from those operating now. As we, of necessity, presume the physiological conditions to have been the same, so we must suppose the mental conditions to have been. Otherwise we should have to operate with some other principle whose mode of action is unknown. For the difference between the various Indo-European languages at the time when they first come into view is too great to be accounted for by purely phonetic causes. We cannot therefore ignore the action of analogy at any period in the history of language, and it is less dangerous in doubtful cases to ascribe to analogy what may be the result of phonetic law than to reverse the process. For in the last event we are establishing a principle which affects all similar cases, while in the former our mistake, if a mistake it is, only affects a single case. Everywhere we must suspect the influence of analogy, and must appeal to phonetic law only in cases which cannot be accounted for on the ground of association. Especially must analogy be looked for in forms which are part of a system, and indeed it is only those isolated instances which are not part of a system, which give any secure basis for establishing a phonetic law. We should not, e. g., be justified in saying that Indo-European *qt* = Greek πτ, from a consideration of λειπτός (= *leiqtós*), as here we have the connexion of λείπω and the whole verb system. But isolated cases like πέμπτος (= *penqtos*), where there is no room for association, afford a safe ground on which to establish the law. We must look not so much to the quantity of the instances as their quality, i. e., their immunity from association.

Origin of word-forms.

It remains to say a few words about problems, to which the Germans give the name of glottogonic, problems that is concerning the origin of word-forms and their elements. We have seen that this was the main point to which Bopp and his successors directed their endeavours. They were not content to establish a primitive Indo-European form, but wished to go further still, and shew how this form itself arose. To attempt this is the same as in a single language to attempt to go beyond the literary tradition, beyond, e. g., Homer and the Vedas, into a region where the material for comparison fails us. But we may distinguish three kinds of problems. It is possible to trace the history of a sound successfully. As even Herodian reduced εἰμί to ἐσμί on the analogy of ἐστί, so we are justified in referring ἵππος to an original stem *eku̯o*, on the analogy of the Latin *equus*. It is possible also to trace historically the syntactical function of a word, to prove, e. g., that the relative ὅς (*i̯os*) was originally demonstrative. But when we come to trace the origin of the component elements of a given form, the case is different. If we knew, e. g., the meaning of the element *-ie-* (*-ī-*) of the optative we should gain an insight into the relation between the potential and volitional meanings of this mood. But all such attempts have hitherto failed. It is for instance very probable that the personal terminations *-mi*, *-ti* may be respectively connected with the Latin *me* and the pronominal *to*, but all such attempts to analyze *-si*, *-masi*, etc., have failed. It does not help us to say, with Curtius, that the phonetic laws in operation in earlier times may have been different from those in operation at a later date; for a phonetic law can only be established in one case by quoting analogous instances, which here fail us. And there is no necessity, even if the element *-si* is pronominal, to derive *-masi* from *ma-tva*. Double roots for the personal pronouns are not unknown. We need only quote *ahám*, *ἐγώ*, *ego* beside *má-hyam*, *ἐ-μέ*, *me*. Nor indeed need the element *-si* be pronominal at all: it is certain that the Latin termination *-mini* in *ferimini* is participial, and it is probable that Sanskrit *-tād*, Greek *-τω* of the imperative is the ablative of a past participle (cf. *ἴτω* and *ἰτός*). Such formations may have been more common than has been supposed in primitive times. Glottogonic hypotheses, though only to be rejected when entirely baseless, cannot be proved, for the facts at our command are too few to admit of certainty. We do not know when and under what circumstances roots served the function of words; we know nothing of the history of inflexion within the limits of the primitive speech. We find in existing languages different roots; in the noun, stem-forming suffixes and case endings; in the verb, tense-stems, mood-stems and personal endings. We can trace the effect of the presence of these different elements, but our knowledge is not sufficient to enable us to pronounce with certainty upon their origin and meaning. For the present we have to be content with plausibility and probability in individual instances; wider and deeper knowledge in the future may bring us closer to the goal of certainty.

Origin of language.

The vexed problem of the origin of speech as a function of the human race is one which falls outside the province of this work. The connexion of thought and speech has been a difficulty unsolved since the days of the first work which has come down to us on the philosophy of language—the *Cratylus* of Plato. Plato recognized that language was neither the result of chance nor purely artificial, but he had no notion that the structure of a language could be built up by the instinct of men living in a semi-barbarous state. It is to the languages of semi-barbarous nations that the modern philologist chiefly looks. Art and design come later in the conscious processes of literary and cultivated languages: but in the speech of uncivilized nations and the dialects of the outlying districts of civilization, the natural laws of speech remain untrammeled and the conditions of change and progress are more readily observed. The question of the origin of language can be approached from the psychological, historical and physiological sides. Psychology is concerned with the expression in words of thought and feeling. History shows us languages in their various stages of development, and enables us to group them into families. Physiology gives the physical conditions under which, in every variety of place and climate, the spoken sound is produced.

Summary.

We have now brought to a close our brief survey of the past and present position of the Comparative Study of the Indo-European languages. The narrow limits of the field to which early inquirers were confined hindered the advance of the science till the beginning of the present century. The discovery of fresh languages has enabled men to make wider comparisons and frame more general laws. A more exact attention to the elements of words and the conditions of speech has led to a more rigorous application of phonetic laws. The apparent exceptions which cannot be explained by these laws are no longer banished to the limbo of sporadic change, but are accounted for by the working of association and analogy. Finally, we have seen that in explaining the elements of Inflexional suffixes the comparative method is inapplicable. Such endings as *-masi* cannot be analysed, because they are part of the inheritance derived from the original Indo-European speech, which from the nature of the case we cannot compare with any cognate languages. In such inquiries we are in a position analogous to that of those who sought to explain Greek and Latin words before the discovery of Sanskrit. The data of comparison are wanting, and therefore many glottogonic problems must remain unsolved.

CHAPTER II.

THE INDO-EUROPEAN LANGUAGES.

The Indo-European languages.

THE result of the researches of Bopp and his successors has been to show that a majority of the languages and dialects of Europe, as well as a number of Asiatic languages, can be grouped together as common descendants from a single parent-speech. Before passing on to consider the phenomena of Greek and Latin, and their relation to the parent-language, it will be well to give a short enumeration of the different members of the Indo-European family. The names of Aryan, Indo-European, and in Germany of Indo-Germanic, are all applied to this community of languages. None of these names is entirely satisfactory. 'Indo-Germanic' omits all notice of Greek and Latin, as well as of the Celtic and Slavonic languages; 'Indo-European' includes too much, while the term 'Aryan' or better 'Arian' is also applied in a more restricted sense to the Indo-Iranian group. In the following pages we have adopted the term Indo-European.

Their mutual relations.

The Indo-European family consists of ten groups or smaller families of language, three of which are to be found in Asia and the rest in Europe. We are justified in distinguishing these different groups by observing that each is characterized by a great number of special elements—phonetic, inflexional, syntactical, and lexicographic. But while we admit that the several languages included under any one head are more nearly allied to one another than they are to the languages under any other head, we can in most cases say nothing of their mutual relation to one another. Broad distinctions, such as are exemplified by the treatment of the mutes, enable us to class together the Indian, Greek, and Italic languages, for instance, on the one side, the German languages on the other; or to distinguish the Greek, Italic, Celtic, and German languages, where the palatal mutes remain mutes, from the Arian, Armenian, Albanian, and Letto-Slavonic languages where they become spirants. But we cannot go beyond this, at present, to say that Latin, for example, is more closely allied to Greek than it is to Celtic; nor is any adequate theory, in most cases, yet discovered of the mutual relations of the dialects of the several languages.

Nor again is the division necessarily exhaustive. The Macedonian languages, for instance, cannot be put under any of the following heads; while the extant fragments of many languages, such as the Messapian and Phrygian, are so small that no grammar of them is possible.

We will now proceed with our enumeration.

The Indian family. 1. The Indian family comes first, of which Sanskrit is the head. The name Sanskrit is properly applied only to the literary language of the priestly caste of the Brahmans, and is distinct from Páli, the sacred language of Buddhism, as well as from the languages of modern India. The oldest form of Sanskrit appears in the Vedas or sacred hymns; the later or classical Sanskrit is the language which conformed to the rules of the native grammarians.

The Iranian. 2. The next group is the Iranian or Persian, consisting of the Old Persian, so far as it has been preserved in cuneiform inscriptions, and the Zend or Old Bactrian, which is the language of the Zend-avesta or sacred books of Zoroaster. Its modern representatives are to be found in Persia, Afghanistan, and Kurdistan.

The Armenian. 3. The Armenian family comprises the dialects of Armenia, which have recently been proved to belong to the Indo-European stock Hübschmann, (*K. Z.* xxiii. 5). Its principal characteristic is the possession of the vowel *e*, which distinguishes it from the other Asiatic languages of the Indo-European family, and connects it with the European branch.

The Greek. 4. The Greek family comprises the different dialects of ancient

Greece, both on the mainland and in the islands and colonies, and their modern representatives. The traditional division of these dialects, resting on the myth of the sons of Hellen, distinguishes Doric, Aeolic, and Ionic. This division is better suited to literature than to the spoken dialects, unless we understand Aeolic to include all that is not Doric or Ionic. The subdivisions of the spoken Greek were in reality innumerable and their mutual relations are not easy to determine. A broad division may be made by a dichotomy into Ionic and non-Ionic dialects, based upon the Ionic change of ᾱ into η.

Ionic.

Ionic was spoken in the Ionian colonies of Asia Minor, in the Cyclades, and in Euboea. According to Herodotus (i. 142) there were no less than four varieties of this dialect in the Ionian Dodecapolis. The grammarians distinguished an old and a new Ionic, the language of Homer and the language of Herodotus. The language of Homer is in the main Ionic, but it is possible to trace forms of Aeolic origin, due perhaps to Aeolic lays out of which the epic poems were constructed. Aug. Fick has even gone so far as to maintain that the Iliad and the Odyssey were originally composed in Aeolic, and to rewrite the poems upon that hypothesis. However this may be, the texture of the language of the poems, as we have them, is Ionic. With Ionic the dialects of Attica are closely connected. Attic preserved, in many words, the original ᾱ for the Ionic η: it is distinguished into the Old and the New Attic. The Old Attic is the dialect of the tragedians and Thucydides, and bears a nearer relation to Ionic than the New Attic, which was employed by the comic writers and the orators. New Attic writes ττ for σσ, σύν for ξύν, ρρ for ρσ, and α for αι in such words as ἀετός, ἀεί, ἐλάα, etc.

Doric.

Of the non-Ionic dialects Doric in its different varieties extended over the south and east of the Peloponnese as far as Megara, the southern Cyclades and Sporades, Crete, Rhodes, the Dorian towns in Asia Minor and the Dorian colonies. The most prominent characteristic of Doric, as a whole, is the use of ᾱ for Ionic η, the πλατειασμός which is spoken of by Theocritus (15. 88). Doric too preserved the digamma and did not change the dental to a sibilant in such words as δίδωτι (=δίδωσι), τύπτοντι (=τύπτουσι). Further differences will be noticed in the treatment of the separate sounds and their combinations.

Under the head of Aeolic are usually classed the dialects of Lesbos, Thessaly, Boeotia, Cyprus, Arcadia, and Elis. It is hard to determine exactly the mutual relation of these different dialects. At the head stands the Lesbian, which is represented in the lyric fragments of Alcaeus and Sappho. It is marked by the retention of the original ᾱ where Ionic has η, by the avoidance of the oxytone accent, in which it resembles Latin, and by ψίλωσις or the use of the smooth breathing, e. g. in ἴππος, ἔτερος. Other distinctive features will be noticed subsequently. The other Aeolic dialects are known chiefly from inscriptions. Aristophanes, it is true, has introduced a Boeotian speaking in the Acharnians, but a comic writer is not always faithful in his representations. The dialect of northern Thessaly is related closely to that of Lesbos and Boeotia, while Arcadian and Cyprian may be classed together: from Herodotus (vii. 90) we know that there were Arcadian colonists in Cyprus.

In the literature of Greece each form of composition adhered to the dialect in which it had at its origin been written. An Athenian of the fourth century would not have written an Epic poem or a choral ode in the Attic dialect; a Spartan playwright, if such there could have been, would not have written tragic senarii in Doric. With the exception of lyric poetry, the chief forms of literature found expression in the Ionic and Attic dialects. It was the Attic dialect which became supreme in the world of literature and of politics, and it is round the Attic that we group the other dialects of ancient Greece. Under the Macedonian Empire it lost its purity, and gradually passed into the κοινὴ διάλεκτος of the grammarians, which is represented by the writings of Polybius and Plutarch. The vulgar speech, which admitted words and constructions of foreign origin or earlier Greek usage, formed the basis of the Hellenistic Greek of the LXX and the New

Testament. Out of the κοινή have been developed the modern Romaic dialects which belong to the Greek group.

'he Al- ·anian.

5. The Albanian is classed apart from the Greek family, but of its earlier history we have no records, so that it is difficult to speak with certainty of its relation to other groups.

6. The Italic family.

'he talian.

Some of the languages spoken in the Italian peninsula may be ignored for the purposes of this book. Of the Iapygian in the extreme south and the Ligurian in the north, very little is known, though the former, at any rate, is supposed by Mommsen to be Indo-European. With the Etrurian also we are too little acquainted to be able to speak with confidence.

The remaining languages divide themselves into two main groups—the Latin and the Umbro-Oscan.

tin.

The earliest remains of Latin date from about three hundred years before the Christian era. One notable characteristic of this language is that, if we except the distinction of the literary and the vulgar Latin, there is no tendency towards a subdivision into dialects till the time when it became the speech of the different provinces of the Roman Empire. The literary language naturally became more or less stereotyped at an early period, and still more entirely so in the epoch which was initiated by Lucilius and concludes with the Augustan Age. The fact that so many Roman authors were also grammarians was not without its effect in establishing a pure standard of Latinity to which all classical models conform. The vulgar Latin, on the other hand, was the speech of the common people, and it was this form of the language which passed into the lingua Romana of the Empire and gave birth to the eight Romance languages of Southern Europe[1], Portuguese, Spanish, Catalan (in North Spain and Roussillon), Provençal, Italian, French, Rhaetoromanic (in the Tyrol, Engadine, etc.), and Roumanian or Wallachian.

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[1] On the Romance languages see especially Diez, *Romanische Grammatik*, and Gröber's articles on 'Sprachquellen u. Wortquellen des lateinischen Wörterbuchs' in *Archiv für lat. Lexicographie*, I. pp. 35 sq., 204 sq., 539 sq., etc.

Umbro-Oscan. The Umbro-Oscan group consisted of the Umbrian, spoken in the east or north midlands of Italy, and the Oscan, spoken in the south midlands. The dialect of Falerii was perhaps Oscan, but nearly akin to Latin; the Volscian and Sabellian were varieties of Oscan.

Umbrian. Umbrian is best known to us from the Eugubine Tables, discovered at Gubbio (Iguvium) in the 15th century. These tables contain a code of religious ceremonial, and are written partly in the national alphabet and in an older dialect, partly in a newer dialect and in Roman letters. The national alphabet was borrowed from Etruria, and accordingly does not contain the letters O, Q, X. It has a peculiar sign for F, using the digamma to represent V. It has no Z (Greek *Zeta*, Semitic *Tsadhe*), but in its place another sibilant representing the Semitic *Zayin*. It does not distinguish G, D from K, T; but before the palatal vowels I, E it has a special symbol ꝺ to represent a palatalised guttural or sibilant. This in the inscriptions in Roman letters becomes S̀ or S (e. g. *s̀i-mu*, Lat. *cis*; *tis̀it*, Lat. *decet*; *fas̀ia*, Lat. *faciat*). We find also between vowels and at the end of a word a modification of D, which in the national alphabet is written S̀, in the Roman, R or RS. This fact explains the Latin *ar-biter*, *ar-fuerunt*, *ar-vorsus*, *ar-cesso*, which are borrowed forms, so far at least as the prefix is concerned. For the Latin *qu*, representing the hard velar guttural, we have in Umbrian *p* (*pis*=*quis*, *pumpe*=*quomque*, etc.). The soft velar becomes *b* (*benust*=*venerit*, *berus*=*verubus*). An intervocalic *s* mostly becomes *r* (*eru*, *erom*=*esse*), but we find *asa* (abl.)=*ara*. Final consonants, especially *m*, *s*, *t*, are often lost, a fact which agrees to some extent with the practice of Latin at one period and of the Romance languages.

In inflexion some of the most interesting points are the following: the termination *s* in the gen. sing. and nom. plur. of the A- and O-declensions (*tutas* or *tutar*=*urbis*, *urbes*); the maintenance of a locative; the termination *-ns* of the acc. plur. appears as *-f* (*asaf*=*aras*); the infin. ends in *u*(*m*) (*aferum*= *circumferre*. With this has been compared the Latin *venum do*). The sigmatic future is preserved, e. g. in *beniest* (*veniet*), *habiest* (*habebit*), *staheren* (*stabunt*); there is a perfect in *-fi* corresponding to the Latin form in *-vi*; the pres. subj. has *a* as its characteristic vowel (e.g. *fas̀ia*=*faciat*, *portaia*=*portet*, *etaians*=**itent*). The vowel of the A-conjugation is preserved in *stahu* (*sto*), *subocau* (*subvoco*), etc. The forms *teřa* (=*det*), *diřsas* (=*dent*) are of interest as preserving the reduplication of the present stem (*te-řa*=*di-de-t*).

Oscan.

The Oscan dialect is chiefly known through the Tabula Bantina, discovered in 1793 and containing the Roman laws for the town of Bantia. The alphabet is sometimes in the Umbro-Oscan characters, sometimes in Roman, occasionally in Greek. It is without O, Q, X, but has two forms of I, one, written ⊦, and subsequently adopted by Claudius for the Roman alphabet (see p. 55), being a close *e*, and two of *u*, one being a close *o*. Oscan distinguished G from K, and D from T, and used doubled consonants, which the Umbrian did not.

Oscan, like Umbrian, represents Latin *qu* by *p* (*pam*=*quam*) and the velar *g* by *b* (*kumbened*=*convenit*); *s* remains between vowels, but sometimes passes into *z*, as *ezum* (=*esse*), but *Fluusaí* (=*Florae*). The termination *d́* is found in the abl. sing. (*suvad*=*sua*), in imperatives (*estud*=*esto*), and in adverbs (*ehtrad*=*extra*). The termination *-s* is found in the gen. sing. of the A- and O-declensions and in the nom. plural of the O-declension. Feminines of the A-declension end in *-u* (*viu*=*via*). We find sigmatic futures (*didest*, *deivast*) and infinitives in *-um* (*deicum*=*dicere*)[1]. The A- and consonantal conjugations are the only ones existing.

Relation to other languages.

As to the question of the connexion of the Italic languages with the other branches of the Indo-European family, it is difficult to say much. The earlier scholars were struck with the obvious resemblance between Greek and Latin, not merely in structure but in vocabulary, and till recently the existence of an original Graeco-Italic period in which the Greeks and Latins lived together as one people, distinct from the other members of the Indo-European stock, was accepted as an unquestioned hypothesis. The theory is familiar in England from the early chapters of Mommsen's history, where the identity of some of the most important words in the vocabularies of the two languages is set forth with all the historian's persuasiveness, but with perhaps a certain disregard of the difference between fact and theory. Very many of his instances are not to the point, for the words he adduces, though common to Greek and Latin, are not peculiar to these two languages. A common Graeco-Italic period is no more proved by the identity of *ἀγρός* and *ager* than a common Graeco-Gothic period is proved by that of *ἀγρός* and *akrs*, or a common Indo-Italic period by that of *ajras* and *ager*. Professor Nettleship, in an *Essay on Early Italian Civilisation*, has recently shown that many of the names of the commonest objects in Latin are either peculiar to that language or find their representatives not in Greek, but in some other members of the Indo-European family. And when we come to the evidence of the structure of the language, the result is even more striking. For in those features which are most characteristic of the Italic languages, they stand in closest relation not to the Greek, but rather to the Celtic branch. The passive in *-r* and the future in *-b-*, the most noticeable points in the Latin verb-system, find their counterpart in Celtic.

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[1] This looks like the accusative of a verbal noun; cf. the corresponding infinitives in Sanskrit from verbal nouns in *-tu*—e.g. *itum* from root *i* (Whitney, § 968).

It is not however possible to substitute an Italo-Celtic for a Graeco-Italic period. All that we can insist upon is that Latin is not more nearly connected with Greek than with other branches of the Indo-European family. The connexion of the two nations is of course close and intimate, but it is historical rather than genealogical, the result of intercourse reaching back perhaps to the times of their earliest occupation of their respective peninsulas, rather than of an original union maintained unbroken till the two peoples separated at the head of the Adriatic Gulf. We are justified in grouping together the Latin and the Umbro-Oscan languages as closely related and as distinguished from the other languages of Italy and from the non-Italian languages of the Indo-European family; but our data do not allow us in this case, nor perhaps in any other, to go into greater detail.

he Celtic mily.

7. The Celtic family, once widely extended, is now to be found only in the north-west of France and portions of the British isles. There is a northern group, consisting of Irish, Gaelic, and Manx, and a southern group, composed of Cymric, Cornish, and Armorican.

he Teu- nic mily.

8. The Teutonic family may be divided into two main groups: the eastern, comprising ancient Gothic and Scandinavian with its subdivisions; and the western, consisting of English, Frisian, Low and High German. Our knowledge of Gothic is confined to the fragments of the Gothic translation of the Bible made by the Arian bishop Ulfilas in the fourth century. The Scandinavian group, which goes most closely with the Gothic, comprises Icelandic, Norwegian, Danish, and Swedish. The western group is not so regular in its sound-system or its inflexions. English, Frisian, and Saxon go together; from Saxon sprang the later Low German dialects. High German is distinguished from the other Teutonic dialects by a different treatment of the mutes. From High German and its dialects sprang the speech of the greater part of modern Germany. For a statement of Grimm's law of the permutation of consonants and the relation of the German to the Classical languages of Southern Europe, see *ch.* xi.

e Baltic mily.

9. The Baltic family contains the three divisions of Old Prussian, Lithuanian, and Lettish.

e Sla- nic mily.

10. The Slavonic family is divided into two main groups. The southern includes Russian, Bulgarian, Servian, and Croatian; the western, the Czechish and Polish dialects. The name Church Slavonic refers to the oldest Slavonic texts, dating back in some cases to the twelfth century and written for the service of the Church.

hlei- er's ssifica- n of the do- ropean nguages.

The above are the ten chief divisions into which the primitive Indo-European language has split. To trace the process of separation and development is a more difficult task. Did our forefathers come, as has been usually supposed, from the plains in the neighbourhood of the Hindu-Kush mountains, or was Europe, as some have lately imagined, the cradle of our race? In what order did the different languages break off from the parent stock? Schleicher has constructed a genealogical tree showing the successive migrations and bifurcations of the different Indo-European groups according to his view of their relations to one another. The Indian and Iranian groups he supposed to be the most ancient, and they remained nearest to the primitive home of the race. The first to split off were the Slavonic and Teutonic groups, who were followed by the ancestors of the Greek, Italian, and Celtic nations of Southern Europe. But though there are features common to the members of these different groups distinguishing them from other groups, yet each individual member of one group may have features in common with a member of another group, which has been classified apart. Thus Schleicher has made a distinction between the Asiatic and European families, yet one of the features common to the Asiatic group, namely the change of original palatal *k* into a sibilant, is also a feature of the Slavonic languages of Europe. A second point of difference was that Europe had the softened *l* where the Asiatic languages retained *r*; and a third that whereas the European languages possessed the vowels *a*, *e*, *o*, the Asiatic had *a* alone[1]. It is true that Iranian and Indian have only the symbol *a*; still, as we shall prove later on, these languages once possessed the other vowel sounds, though in writing they represented them all by *a*. The hypothesis of the splitting of the *a*-sound is erroneous, as will be demonstrated hereafter from the laws of palatalization in Sanskrit. Apart from this too, Armenian, which ranks as an Asiatic language, has a vowel-system corresponding to that of Europe. Schleicher's genealogical classification will not hold good if carried through to all its consequences. By a rigid division into groups we are constrained to overlook the links which connect the individual members of different groups. Again, in dealing with the features of resemblance between different languages, not every point of identity is to be regarded as an argument for original community of life. A word which is found in some languages only may once have been in use in other languages, though it has since disappeared, and the same may be the case with formative elements, such as the augment, which appear in some languages but not in others. Even what are supposed to be new formations common to a group may by subsequent comparison be proved to have their equivalents in other groups, as has been the case with the *e* of the European languages (cf. Delbrück, *Stud. of Lang.*, p. 138).

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[1] It is still true that the Asiatic division, with the exception of Armenian, is distinguished from the European by the possession of only a single symbol for these different vowel sounds.

Dialects of the primitive language.

Genealogical classifications of the different Indo-European races are to be regarded with a sceptical eye. To begin with, we do not know how numerous was the primitive race before the era of separation. As we attribute to it not only the origin of words and sounds but also the inflexions of highly developed speech, the primitive language must have had a long past history, and should therefore have been the language of a numerous race. Such a race must have been spread over a wide extent of country, and in that case there must have been a tendency to dialectical variety. We need not assume that the primitive speech was homogeneous, or that it was not subject to the conditions which are everywhere present where language is spoken by a numerous race in an extensive country and in a primitive age, when communication is not developed. The differences then which we can discern in the languages of Europe may have begun in the dialects of the primitive speech before the Indo-Europeans left the plains of Asia, and afterwards have been increased. We must then, perhaps without a sigh, resign the use of such palatable compounds as Slavo-Germanic and Graeco-Italo-Celtic. A

Schmidt's 'Wave-theory.'

more satisfactory metaphor to represent the reciprocal relations of connected languages is that first put forward by Johann Schmidt in his work, '*Die Verwantschaftsverhältnisse der indogermanischen Sprachen*,' and since largely adopted by other scholars. Schmidt prefers to compare the different languages to waves; by which he means to imply that all the languages of the Indo-European family formed once, as it were, a continuous whole, the adjacent parts standing in intimate relation to one another, and that the splitting into different types was the result of dialectic differences originating within small limits and gradually extending themselves so as to cover a considerable area. The relation of different languages on this hypothesis is to be explained as much by geographical as by genealogical considerations. Neighbouring dialects borrow from one another; but dialects widely separated in locality have no close mutual connexions. We may illustrate this by the Greek dialects. An original τι̯ becomes ττ in Attic, Boeotian, and Euboean, and in these dialects alone, since Attica, Boeotia, and Euboea are contiguous districts; similarly Rhotacism is introduced into the later Laconian from the neighbouring Elis. Schleicher's metaphor of the tree and its branches implies that the 'fundamentum divisionis' between different languages or dialects is in each case one, and that the divisions can be made mutually exclusive. But this is contrary to the existing facts. If in the case of the Greek dialects we take the treatment of an original ā as the 'fundamentum divisionis,' we shall have on one side the Ionic and Attic, on the other the rest of the Greek dialects. If we take the treatment of σσ, the dialects of Boeotia, Attica, and Euboea will stand by themselves; if that of τι, the Arcadian, Cyprian, Lesbian, Ionic, and Attic dialects will form one group. No absolute dichotomy is possible, except with reference in each case to some one grammatical peculiarity, and any attempt to arrive at a final and absolute classification of languages in their relation to each other must therefore, from the nature of the case, be futile.

Mutual relations of the Greek dialects.

Mutual relations of Greek and Latin.

We may therefore conclude that the Greek and Latin languages, which will be the subject of our special attention, were once probably neighbouring dialects of the common speech, just as they afterwards became neighbours in their European home. They are the only Indo-European languages which have feminines of the O-declension, and their systems of accentuation are to some extent the same. The resemblances and differences of the two languages will be fully brought out in the following pages; but there is no foundation firm enough on which to build the hypothesis of an original Graeco-Italic unity.

Latin and the Romance languages.

The mutual relations of the languages discussed above stand of course on quite a different footing from the relations which subsist between the Lingua Romana of the provinces of the Roman Empire and the modern Romance languages. Here we have both the mother tongue and the historical development of its descendants before our eyes. The Romance languages are directly descended from the Lingua Romana just as the Indo-European languages are descended from a primitive Indo-European speech. But in the one case we can verify the descent by historical inquiry; in the other we have to assume and reconstruct a parent speech based upon the similarity of its descendants. Consequently the Romance languages admit of a genealogical classification which with the wider extent and great antiquity of the whole body of Indo-European languages is only problematical.

Morphological classification.

Language consists of words, grammatical forms, and syntax. Morphological as distinguished from Genealogical classification is based upon systems of grammatical forms, and it is by these that languages can be best distinguished into groups of larger or smaller extent. It is in its system of grammatical forms that the identity of a language lies. Syntax and vocabulary may change, but if the grammatical system remains, the language is still the same.

Upon this principle of classification there are three great families of speech: Radical, Agglutinative, and Inflexional, distinguished according to the way in which they combine the root or central significant elements of speech with the formative elements which mark the distinctions of person, number, gender, tense, mood, or case.

Inflexional languages.

In the Inflexional group, to which belong all the Indo-European languages, there is, as we have already noticed, a distinction between roots Predicative and roots Pronominal. From the combinations of these two different sets of roots arise the different parts of speech and their several inflexions. In the Inflexional type of language roots have no separate existence apart from words. In any Greek or Latin inflexion we discover the root, or main significant element which we can trace no further back, by a process of analysis. The terminations or formative elements, which were probably Pronominal in origin, have no independent meaning apart from the connexion in which they occur. The question of roots and suffixes however, their nature and combinations, will be discussed more fully under Vowel Gradation and Morphology.

Semitic languages.

To the Inflexional type also belong the Semitic languages of Hebrew, Phoenician, Assyrian, Syrian, and Arabian. These languages are distinguished by the triliteral character of their roots, which must consist of three consonants, and by internal changes in the vowels admitted into the root. Their grammatical system is quite different from that of the Indo-European, as for instance in their poverty of moods and tenses. Though the Semitic languages admit of being grouped together, there is no family which shows such strong features of resemblance as the Indo-European group, or enables us to trace so readily the various processes of linguistic change and development. Hence it is the Indo-European group which has provided the material on which the science of language rests.

Radical languages.

The Radical or Monosyllabic languages, like Chinese, use roots as independent words, which depend for their meaning upon their position in the sentence. In such languages we find no formal distinction of the parts of speech, no inflexion, no derivation. They form a small minority of languages.

Agglutinative languages.

Between the Radical and the fully Inflexional languages come the Agglutinative languages, approximating in varying degrees to one or other of the two extreme types. The characteristic of the Agglutinative languages, as a body, is the partial fusion of the radical elements, one of which bears the leading idea, while in the others the individual meaning is obscured. But as the fusion of the elements of words is a question of degree, we can draw no hard and fast line of distinction between Agglutinative and Inflexional languages.

In this work we are only concerned with the Inflexional languages of the Indo-European family. Still we may add, under their different heads, some of the chief languages of the other families.

The Radical or Monosyllabic languages are few in number and are found in South-Eastern Asia; namely, Chinese, Tibetan, Burman, Siamese, and Annamese.

The Agglutinative languages are the most numerous. Under this head we reckon the various languages of Africa, viz. the Hamitic, including the speech of Egypt and Northern and Eastern Africa; the Bantu or South African family, and the languages of the Negroes of Central Africa. Besides these we have the languages of Papua and Australasia, the Malay-Polynesian group, embracing the islands of the Pacific, and South-Eastern Asia. Next the Dravidian or South Indian family of languages; the Ural-Altaic, which includes Turkish, Finnish, and Hungarian; and the mass of different languages upon the American continent. In Europe we must notice as Agglutinative the languages of the Basque people in the Western Pyrenees.

CHAPTER III.

SOUNDS AND THEIR CLASSIFICATION.

Sounds and Symbols.

SCIENTIFIC philology, whether comparative or historical, is based upon the actual sounds of the various languages with which it deals, and therefore to determine their nature it must depend upon the sciences of Physics and Physiology, the one to furnish the acoustic analysis of single sounds, the other to inquire into the functions of the different organs of speech. Unless we are accurately acquainted with the nature of the various sounds and the different organs by which those sounds are produced, the science of language does not rest upon a basis of phonetic fact, but becomes a mere enumeration of the changes of letters in the various alphabets of different nations. Letters are but the symbols of sound, and we must be assured of the facts which such symbols represent, for the same sound need not have the same symbol in every language. Phonetic change could best be observed in the language of a nation which was conscious of the scientific relation of the letter to the spoken sound, and changed its spelling whenever a change of pronunciation became general; a nation which was endowed with a sort of orthographic gelatine delicately responsive to the rays of popular pronunciation. Our own spelling, for instance, is stereotyped, but matters would not be improved if we each and all spelt according to our pleasure. Pym and Shakespere spelt their names in any fashion they pleased, but they were not therefore more scientific than the Cholmondeley of to-day. Spelling ought properly to be a scientific representation of the spoken iterary nd natural nguage.

iving and ead lanuages.

sound, remaining stereotyped until the spoken sound has changed. The laws of the changes and relations of different sounds can be best observed in the facts of living language, and more clearly in the spoken than in the literary dialects or in the language of society, which are more open to arbitrary influences. We aim at determining the actual nature of the sounds of any given language, and at discovering their relation to the copies presented in the alphabetic symbols. In the case of savage nations the existing sounds have to be fitted to an alphabet. The student of the comparative philology of the dead languages has not the advantage of being able to observe the living sound. He must content himself with the alphabetic signs, their transcription in words borrowed by one language from another, and the accounts given of them by ancient grammarians. On the other hand, the dead languages have this advantage, that in them we can trace sound-changes as represented alphabetically in their development from the start to the conclusion, and we can by analogy transfer to them the general laws obtained from a study of the phenomena of living speech. To prove the value of correct historical observation of the changes of the written sign, we need only refer to the law of consonantal change in the languages of northern and southern Europe, known as Grimm's law. Here, too, it might be pointed out that the discovery of fresh laws can be more readily made by the consideration of related groups, as was done by Grimm, than by dealing with isolated single sounds or letters. Dialects are important, as has been said above, because the language of literature and society compared with them is a mixture of speech and sound-forms of varied origin, and is also more subject to the influence of individual caprice.

ounds in ombination.

Besides the study of single sounds isolated by analysis, phonetics are also concerned with those sounds synthetically arranged in syllables and words. Sounds are not isolated in the living speech, for isolation is the result of grammatical analysis. They appear in combination with other sounds; consequently, side by side with the nature of individual and isolated sounds, philology has to consider the effect of different sounds upon one another when arranged in the actual combinations of a given language.

The nature of sound.

A musical sound is a regular periodic vibration of the surrounding elastic medium of the air, while a noise may be called an irregular vibration. Sounds can be distinguished according to their strength or loudness, which depends upon the amplitude of the vibrations, and according to their height or pitch, which depends upon the number of vibrations within a given time. In the case of different instruments—as, e.g., the human voice, a trumpet, a fife, or a flute—there is also a difference of timbre or quality in the sounds produced. Along with varying quality go varying harmonics, that is, the secondary tones which determine the character of the quality of a sound. So too the quality of a sound is affected by the vibrations it imparts to the bodies with which it comes in contact.

The organs of speech.

The chief organs of speech are the lungs, and, speaking generally, the throat and the mouth. The breath is expelled from the lungs and afterwards modified in the throat and mouth. From the lungs it passes into the windpipe, and thence into the larynx. At the top of the larynx comes the epiglottis, a valve which opens and shuts over the glottis or upper opening of the larynx, and which closes over it in swallowing. In the interior of the larynx are two ligaments, the vocal chords, forming an aperture which can be extended or contracted at will by the surrounding muscles. When the breath passes these ligaments, the pitch or height of sound is determined by the number of their vibrations, and the quality of the sound is further determined by the form taken by the mouth and throat; these have a note of their own which combines with the note which results from the vibrations of the vocal chords. The roof of the mouth behind the teeth consists of the upper or hard palate and the lower or soft palate (velum), of which the lower extremity (uvula) can close the entrance to the nose passage. Apart from speech the breath passes through the throat, mouth and nose without appreciable sound, and the different organs lie at rest. In order to articulate, the passage of the breath is regulated and the position of the organs of speech is altered at will. A stream of air is drawn into the lungs and breathed out in bursts of different length and strength. Voice depends upon the contraction and vibration of the vocal chords; in the case of a whisper there is less, if any, vibration. A complete closing of the glottis causes a check analogous to the effect of *k* or any other mute sound. In forming non-nasal sounds the uvula is pressed up so as to cover the passage to the nose. The sound is nasalized if the passage be open, in the case of vowels as well as consonants. In the French nasals *en*, *vin*, *un*, there is guttural as well as a nasal element, not so much however as in the English *ng*. Other elements of sound, not represented in alphabets, are the transitional sounds which arise, when sounds are arranged consecutively in syllables and words, in changing from one sound-position to the succeeding. Thus *on*, *in*, *an* have in each case a different transitional sound in passing from *o*, *i*, *a* respectively to *n*.

Distinction of Vowels and Consonants.

From the oldest times grammarians have divided the sounds of language into the two main divisions of vowels and consonants. Plato, in his *Cratylus*, distinguished between *φωνήεντα* and *ἄφωνα*, while with later grammarians *σύμφωνα* were divided into *ἡμίφωνα* and *ἄφωνα*. This classification, however, is based not on the nature but on the function of the different sounds; it throws no light upon the influence of single sounds on one another or their independent alterations. For instance, *m*, *l*, *r*, *n* are classed as consonants, and it is true that they perform the function of consonants, but yet inquiry into their articulation and acoustic analysis shows that there is no difference of principle between the sounds which these letters represent and the vowel-sounds. The old method of classification provides no definite line of demarcation between vowels and consonants, and hence the necessity for subordinate grouping into semivowels, liquids, nasals, etc. In many cases the functions of sounds are due to their position in syllables and words. In such words, for instance, as the English *saddle*, *riddle*, *captain*, *boatswain*, etc.; in ordinary pronunciation the liquid or nasal has the function of a vowel; the words are dissyllabic, and sound as *saddl*, *riddl*, *captn*, *bosn*. But before vowel-sounds these same *l*, *m*, *n*, *r* do duty as consonants, e.g., in such words as *rite*, *night*, *light*, etc. The term consonant then is used in two senses; in one it means difference of function, in the other difference of sound character. The old division of consonants into *Tenues*, *Mediae* and *Aspirates* is of no scientific value, because we no longer take the same view of the sounds which the Alexandrian grammarians classified in this way. The *Tenues* are no longer regarded as bare or thin letters, nor is any scientific requirement fulfilled by calling letters *Mediae* because they are ranked between the *Tenues* and the *Aspirates*.

Classification of sounds. The number of separable speech sounds is infinite, and to classify them all is impossible. For practical purposes a limited number of types can be chosen, and upon their characteristics our definitions are based. The mouth space through which the breath passes has two outlets: one at the mouth, the other at the nose. Sometimes this breath passage is kept wide throughout, as in the case of vowels and sonants. Sometimes it is so far narrowed at a given point that the breath sounds against the narrow walls, as in *f*, *s*, *ch*, etc. Sometimes, again, the passage is closed at a given point, as in the case of the explosives, e.g. at the lips in *p*, *b*; at the teeth in *t*, *d*; at the palate in *k*, *g*. Besides these distinctions we have to note the part played by the bottom of the soft palate in closing or opening the nose channel.

Consonants. A consonant is the sound or rather noise resulting when the breath is closely squeezed or stopped at some part of the mouth or breath passage. The main distinction between vowels and consonants is that in the case of vowels the sound which issues from the larynx is modified by the shape afterwards assumed by the open mouth passage, while in the case of consonants the noise results from the narrowing or stopping of the breath at a given point. In the case of a vowel the breath is vocalized by the vibration of the vocal chords, and passes through the mouth without check or

Vowels.

audible friction, but in the utterance of different vowels the mouth passage assumes a different form. The instrument, that is, on which we play, is changed. Vowels, like consonants, can be classified according to the place of their articulation. It is only recently that with vowels this principle of classification has been recognised; and its recognition is due to the labours of the English school, notably Bell, Ellis, and Sweet. Previously, attempts were in the main made to classify the vowels according to their sound, and secondarily to inquire into the mode of articulation. It was assumed that the original Indo-European language possessed only the vowels *a*, *i*, *u*, a supposition which later inquiries have set aside, and the other vowels were arranged between *a*, *i*, *u* in a pyramidal form, of which *A* was the apex, and *I* and *U* formed the base. But under this classification it was possible for a vowel with a simple tongue articulation to be put side by side with one which required a combination of tongue and lip articulation. By Bell's method of classification such distinct articulations are kept apart. Of course there is not with vowels, as with consonants, a stoppage of the breath either complete or approximate, but the places of vowel articulation are distinguished by the position of the tongue. Each new position of the tongue is accompanied by a fresh vowel sound, so that the number of vowels can be infinite.

Classification according to place of articulation.

Classification of vowels.

For purposes of classification, however, certain typical varieties are selected. Thus we have the *horizontal* positions of the tongue, according, that is, to the point in the front or back of the mouth at which the place of articulation lies; and the *vertical* positions, according to the distance of the articulatory portion of the tongue from the palate. According to the horizontal position of the tongue, i.e. its movement backward and forward, the vowels can be divided into guttural (back), palatal (front), and intermediate. *a*, for instance, is guttural; *i* is palatal.

According to the vertical position of the tongue, that is, its movements up and down, vowels can be distinguished into high, mid, and low. Thus the *e* in English *pretty* is high, while the *a* of *man* is low. Every vowel sound can be distinguished into open or wide, and shut or narrow. In the shut vowels there seems to be a greater convexity of the surface of the tongue, and a sense of effort and tension in pronunciation. Thus in the word *bit* the vowel is open, but the same vowel is close or shut in the French *fini*. Besides this, again, there are the modifications produced by rounding or projecting the lips, which can affect all the vowels. By adopting the above means of classification, Sievers and Sweet, following Bell, furnish a list of thirty-six distinct vowel sounds; but as it is no part of the object of this work to establish an international alphabet for the expression of all the vowel sounds in modern use, we shall only take note of the familiar varieties which occur in the languages under our consideration.

An open guttural *A* occurs in *father*, *papa*. The same vowel, with lower vertical position of the tongue, appears in *man*, *hat*.

A narrow palatal *I* occurs in French *fini*, and the same vowel open appears in English *bit*. In both words the vertical position of the tongue is high.

A narrow palatal *E*, with middle vertical position of the tongue, is to be seen in French *été*, *aimer*. The same vowel is wide or open in English *head*, *end*. Of the vowel sounds modified by the action of the lips there appears a narrow guttural *U* in German *gut*, with high vertical position of the tongue, while the vowel is open in English *good* and *full*.

A narrow guttural *O*, with middle vertical position, is to be found in German *so*, *Sohn*, and with a low vertical position in English *lord*, *law*.

A wide guttural *O*, with low vertical position, occurs in English *not* and *dog*.

Classification of Consonants.

Consonants, as we have before remarked, are distinguished from vowels by the narrowing or stopping of the mouth passage, which in the utterance of vowels is kept comparatively wide and open. Consonants can be classified according to the place or form of their articulation, or according as they are voiced or voiceless. Three places of articulation were recognised in older classifications, viz. guttural, dental, and labial. The discovery of Sanskrit led to the introduction of palatal sounds. In the original language, as will be shown at length later on, there were two sets of guttural or palatal sounds, i.e. the sound of *k*, *g* before the vowel sounds *a*, *o*, in which the agents were the tongue and the velum or soft palate, and the sound of *k*, *g* before the palatal vowels *e*, *i*, where the agents are the tongue and the hard palate. This distinction leads to important consequences in Sanskrit, Greek, and Latin.

Tenues and Mediae.

The consonantal system of the Greek and Roman grammarians embraced two kinds of mutes (i.e. sounds in which there is a complete stoppage of the breath), known to us under the Latin names of *Tenues* and *Mediae*. The so-called aspirates of the Greek φ, χ, θ, Lat. *ph*, *ch*, *th*, had at the time that system was put forward already (cf. Sievers, p. 115) become spirants: at any rate, we now pronounce *ph* and *ch* as spirants. The signs for the Tenues π, τ, κ, Lat. *p*, *t*, *c*, *k*, and the Mediae β, δ, γ, Lat. *b*, *d*, *g*, have passed into the writings of all western nations under the same names. Still *p*, *t*, *k* are in different districts differently pronounced, with stronger or with weaker stream of breath, while *b*, *g* are occasionally pronounced as spirants.

Under the term Tenues the old grammarians meant to include the unaspirated voiceless checks, under Mediae the unaspirated voiced checks: the classification was based upon the nature of the sound, and not upon the place of its articulation.

Place of articulation.

Proceeding now with classification according to place, we find foremost in the mouth the Labials or lip-sounds, formed either by both the lips or by the under lip and upper teeth.

Labials.

They are *p*, *b*, *m*, *f*, *v*, of which *f* is the voiceless spirant answering to *p*, and *v* the voiced spirant answering to *b*. Further back in the mouth come the different sounds produced with the tongue in contact with the roof of the mouth. Furthest back we have the guttural sound *k*, starting upwards from which any number of sounds can be pronounced at different points of contact by the tongue and the roof of the mouth, whether dental (front), palatal (middle), or guttural (back).

Dentals.

Thus in the front of the mouth we have the *Dentals t*, *th*, *d*, *sh*, *r*.

Palatals.

Further back the *Palatals*, which result from contact of the tongue and hard palate, such as *k* and *g*.

Gutturals.

Further back still we have the *Guttural* sounds, with articulation of the tongue and soft palate; which include the deep Semitic gutturals as well as the Indo-European *k*, *g* before *a* and *o*, and such sounds as the *ch* of German *ach* and the *ng* of English *sing*.

Form of articulation.

According to the form of articulation we can distinguish Consonants into *Open* or *Fricative*, where the mouth passage is narrowed but not completely closed, e.g. *s*, *f*, *r*, *z*, *v*; *Divided*, where the passage is stopped in the middle, but kept open at the sides, e.g. *l*.; *Stopped* or *Explosive*, also called *Mutes*, where there is complete closure of the mouth passage, e. g. *k*, *g*, *t*, *d*, *p*, *b*; and *Nasals*, where the nose passage is left open, e.g. *m* and *n*. *N* takes its character from the nature of the neighbouring sounds; e.g. it is guttural in *sink*, but dental in *tent*.

Voiced and Voiceless.

Apart from their classification according to place and form of articulation, consonants may be divided into *Voiced* and *Voiceless*. It is not easy to draw a sure line of demarcation between pure sonant vowels and voiced consonants. The difference lies in the comparative ratio of the energy of exspiration and the width of the voice-passage. The letter *l*, for example, is before consonants a vowel like *a* and *e*, but when combined with a preceding or following vowel it is only semi-vocal, and becomes consonantal in its function. What is true of *l* is also true of the other semivowels *r*, *m*, *n*, as well as of *i*, the consonantal equivalent of which has been called the *yod*-sound, and of *u*.

Voiced.

The *Voiced* or Sonant consonants, in pronouncing which there is a vibration of the vocal chords, are the *Nasals m*, *n*, and the liquids *l*, *r*, which, as we have shown, can perform the function of either vowels or consonants, just as *i* or *u* can; the

Mediae g, d, b, the aspirated *Mediae gh, dh, bh*, and lastly the spirants *z, j, v*.

iceless. The *Voiceless* or *Surd* consonants are the Tenues *p, t, k, q*, the aspirated Tenues *kh, th, ph*, and the Spirants *s, f*.

des. Besides the different sounds which we have classified, we have the introductory glides represented by the smooth and rough breathings. In singing a good singer begins from the outset with the voice, and allows no breathed introduction; in speaking there is an introductory breath before vowel sounds. If stress is laid upon this initial glide, there ensues the rough breathing *h*, in which the organs of the mouth are kept apart as for a vowel sound, but the vocal chords do not vibrate. The rough breathing may be regarded as an emphasised initial glide which varies in character according to the following vowel sound. It can also come at the end of a word. In this position the Sanskrit alphabet has a separate symbol for the rough breathing, called *visarga*, which is never original but is a substitute for final *r* or *s*. If no stress is laid upon the initial glide before a vowel, we have the ordinary smooth breathing.

Having now classified the different sounds which appear in different languages, we will go on to consider these sounds as represented in different alphabets.

habets. A perfect alphabet would, as we have seen, correspond in the number of its symbols to the number of simple sounds in the spoken language. No alphabet does this; the symbols inherited from the past are constant, while the sounds they represent are continually changing. The symbols of our own alphabet are nearly the same as those of Latin; these last were borrowed from a Greek alphabet, and all the Greek alphabets were borrowed from the Phoenicians. Of the rise and progress of the art of writing in Greece we know but little. The poets give us different legends ascribing the introduction of the alphabet to Prometheus, Orpheus, Linus, Cadmus, or Palamedes. Herodotus (5. 58) says, categorically, that the art of writing, as well as other arts, was brought into Greece by the Phoenicians who came with Cadmus, while before that time it was not known. It is more than doubtful whether it was known to the Greeks of the Homeric age. We have the *σήματα λυγρά* which Proetus gave to Bellerophon, *γράψας ἐν πίνακι πτυκτῷ* (*Z.* 168), and we have the marks put by the heroes on the lumps of clay which they cast into the helmet (*H.* 175); but in neither of these instances is there conclusive proof of actual writing. If the letters were known before the age of the Wise Men, yet they were not in common use; for wood, stone, and metal were materials too clumsy. The tradition of antiquity is summed up by Josephus (*c. Apion.* I. 2.) where he says 'that the Greeks learnt the art of writing at a late date and after great difficulty. Those who wish to attribute to it the earliest origin boast of its coming from Cadmus and the Phoenicians. The poems of Homer were handed down without being committed to writing, and only in a subsequent age were reduced to writing and arranged in their present shape.' **Phoenician alphabet.** Assuming that the Greeks borrowed their alphabet from the Phoenicians, the last named were not its inventors. These industrious traders, the middlemen of ancient civilization, handed on to Greece the letters which they may themselves in the first instance have obtained for commercial purposes from Egypt, where an alphabet called hieratic had been developed from the older hieroglyphics. This is the probable history of the Phoenician alphabet. It became the parent of almost every alphabet, properly so-called, upon the earth: of the Semitic alphabets of Hebrew and Aramaic; of those of Italy and Greece; of those of the native inhabitants of ancient Spain; of the runes of the Teutonic and Scandinavian tribes, and of the systems of India and Abyssinia. **Greek alphabet.** The Phoenician alphabet as adopted in Greece is different both in the form and value of the symbols from the alphabet of Phoenicia proper. The most striking contrast lies in the fact that the original alphabet consisted solely of consonants; the vowels were not represented by special signs, but understood to be inherent in the consonants. The Greek alphabet had two main divisions, Eastern and Western. The Eastern division comprised the alphabet of Asia Minor, the Ionian alphabet proper; the alphabet of the Aegean islands, Thera, Melos, Crete, and others, and the alphabet of the mainland of Greece, viz. Argos, and Corinth with its colony Corcyra, as well as the old Attic. The Western division included the alphabets of the rest of Greece and of the Sicilian and Italian towns, of which the most important were the Chalcidian colonies.

The earliest Greek alphabet was the Ionic alphabet, found in the inscriptions of Greek mercenaries upon the colossus of Abu Simbel in Egypt and dating from the beginning of the sixth century, or earlier still in the inscriptions in the sacred enclosure of Apollo at Naucratis, the emporium of Miletus (see paper on the Early Ionic Alphabet by Mr. E. A. Gardner in the *Journal of Hellenic Studies*, vii. 220).

Speaking generally, the Greeks adapted the Phoenician symbols to their own requirements as follows. Four of the Phoenician letters, *Aleph*, *He*, *Ayin*, and *Yod*, were employed to represent the vowel sounds A, E, O, I, while a new symbol was invented or borrowed elsewhere for ῦ ψιλόν. The Phoenician *Vav* was retained in Greek as the digamma, Ϝ, which is still extant in inscriptions and is required by the metre in the Homeric poems, though it is not there represented by a special sign. These letters, along with Σ and the consonants Β, Γ, Δ, Κ, Λ, Μ, Ν, Π, Ρ, Τ, which were borrowed with little change of form, are the letters which, according to tradition, were brought from Phoenicia by Cadmus. Of the other letters the symbol H was used in some Greek dialects, as in Italy, for the sign of the rough breathing. In the Ionic alphabet, as adopted in Attica, the rough breathing had no sign, but H was employed as the sign of a vowel.

The Phoenician Ϙ, *Koppa*, fell into disuse; it survived longest in the alphabet of Chalcis, whence it passed into the Roman alphabet as Q. In classical Greek the sound of Ϙ was not distinguished from the sound of K, but Ϙ survives in old inscriptions. In Ar. *Nub.* 23 we have κοππατίας used of a horse branded with this letter, just as the old σάν or compound *σαμπῖ* (Hdt. I. 139) is preserved in the word *σαμφόρας* (Ar. *Eq.* 603; *Nub.* 122, 1298). Differences in the alphabets of different Greek districts may best be explained by assuming various centres of Phoenician influence. The Ionian alphabet came into general use throughout Greek speaking tribes in the fifth century. A special feature of this alphabet is the use of the symbol H to represent, not the Spiritus Asper, but the long open vowel *ē*. The same alphabet also distinguished between O and Ω. In the inscriptions of Naucratis, referred to above, we find the symbol Ω, showing that the distinction between O and Ω was early regarded as important. Mr. Gardner supposes that the symbol was taken from the syllabic alphabet of Cyprus, where the Milesians first met the Phoenicians in trading to Egypt.

If H and Ω were simply long varieties of E, O, it is odd that the Greeks should not have distinguished between long and short in the case of other vowels. Before the adoption of the Ionian alphabet in Attica, in the archonship of Euclides 403 B.C., E did duty for E and EI. Apparently then the symbol H was adopted to represent the same sound as the open *e* of Italian, and in the same way Ω represented not simply long *o* but a more open sound.

Z, earlier I, takes the place of Phoenician *Zayin*.

The letter Ξ, Phoenician *Samekh*, has in Greek a new name *ξῖ*. Before the archonship of Euclides this sound was in Attic represented by XΣ (*chs*). The Ionic Ξ does not appear in Italy, where the sound was represented by X (*cs*, *chs*). In the Ionic alphabet X (i. e. *χῖ*, *ch*) represents the hard guttural aspirate, though it holds the same position as the Roman X (*chs*).

The Greek *σίγμα* takes the place of Phoenician *Shin*. According to Herodotus (I. 139) the Dorians called *σάν* what the Ionians called *σίγμα*. This may point to a difference of sound and *σάν* represent the Phoenician sibilant *Tsade*. The compound *σαμπῖ* is used to denote 900. The sounds of the Phoenician sibilants need not be discussed here.

The non-Phoenician letters, introduced into the Attic from New letters.

the Ionian alphabet in the archonship of Euclides, were Φ, X, Ψ, and Ω. The sounds of the Greek aspirates Φ, Θ, X were not, in all probability, fricative like the sounds of modern English *f* and *th*; they were momentary sounds followed in each instance by a distinct breathing. Thus X represents an English *k'h*. Before the introduction of the symbols Φ and X, the sounds were represented by the double letters ΠΗ, ΚΗ.

Roman. The Roman alphabet was borrowed, in all probability, from that of the Chalcidian and Dorian colonies of Campania and Sicily. To this it owes the form of the letter L, of C for Γ, of X for Ξ, and the retention of the Koppa in the form Q. The Roman alphabet consisted originally of twenty-one signs, A, B, C, D, E, F, Z, H, I, K, L, M, N, X, O, P, Q, R, S, T, V. The signs Θ, Φ, Ψ do not appear as letters, but are kept as the symbols of notation for 100, 1000, 50; though in the case of the first two the form of the symbol is assimilated to that of the initial letters of *centum* and *mille*. The digamma keeps its proper place and sign, but it has a fresh value, that of the hard labial spirant, a sound unknown to Greek. The letter Z is found on a coin of Cosa, in Faliscan inscriptions, in the fragments of the *Carmen saliare*, and is common in Oscan and Umbrian, but early disappeared from the written language, as its sound merged in that of S.

The introduction of the letter G for the soft guttural is attributed to Appius Claudius (censor, 312 B.C.), or Sp. Carvilius Ruga (circ. 294 B.C.)[1]. Before that time C represented both the hard and soft guttural, and it continues to represent the latter even in classical times in the abbreviations *C.*, *Cn.* for *Gaius*, *Gnaeus*. On inscriptions we find *ecfociont* (*effugiunt*), *pucnandod*, *leciones*, etc.

The sign K also disappeared early, as its sound became identical with that of C, but it is preserved before *a* in *Kaeso*, *Kalendae*, and the abbreviations KK (*castra*), KS (*carus suis*), etc.

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[1] The letter G is now known to occur on the *as librale* of Luceria (c. 300–250 B.C.) (Edon, *Ecriture et Prononciation du Latin*, p. 145).

Y and Z were borrowed from the Greek alphabet in the time of Cicero to represent the Greek letters υ, ζ. These had been previously represented by *u* (as in *Aeguptus*) and *ss* (medial, e. g. *tarpessita*) or *s* (initial, e. g. *sōna*).

The emperor Claudius attempted to introduce three new signs—⊢ for the middle sign between *i* and *u*, as in *opt⊢mus*, Ⅎ for the consonantal *u*, and Ɔ for *ps*, *bs*. But these characters did not survive after his death.

Sanskrit alphabet.

The alphabet of Aryan India, the *devanāgarī*, differed in many of the sounds it represented from the Greek and Roman alphabets. The actual symbols it will be no part of our duty to discuss. The written unit was not the simple sound but the syllable, and the substantial part of the syllable was the consonant preceding the vowel. The short vowel *a*, where not initial, is implied in the consonant. The signs for other vowel sounds in the interior of a word are attached to the consonants as subordinate. In the following scheme the diphthongs are omitted. Represented in our own letters we have:

Simple vowels *a*, *i*, *u*, *ṛ*, *ḷ*, both long and short.
Semivowels *y*, *r*, *l*, *v* (=English *w*).
Sibilants *ç* (palatal), *ṣ* (=*sh*, lingual), and *s* (dental).
Gutturals *k*, *g*, *kh*, *gh*, *n̄*.
Palatals *c*, *j*, *ch*, *jh*, *ñ*.
Linguals *ṭ*, *ḍ*, *ṭh*, *ḍh*, *ṇ*.
Dentals *t*, *d*, *th*, *dh*, *n*.
} In practice not to be distinguished by Europeans from one another. (Cf. Whitney, *Sk. Gr.* § 45.)
Labials *p*, *b*, *ph*, *bh*, *m*.
Aspirate *h* and at the end of a word the *visarga* *ḥ* as a substitute for final *r* and *s*.

We see then that Sanskrit has no symbols for the Greek and Latin vowels *e* and *o*, and that it uses *r* and *l* as vowels and consonants. Besides this, Sanskrit employs two series of sounds as guttural and palatal, and possesses the soft aspirates *gh*, *jh*, *dh*, *bh*, as well as the hard aspirates *kh*, *ch*, *th*, *ph*, which answer to the Greek χ, θ, φ. Further it distinguishes between dentals or teeth sounds and linguals or sounds uttered with the tip of the tongue, and has a nasal answering to each of the different divisions of the explosive consonants.

Indo-European alphabet.

The Indo-European alphabet, as constructed from a comparison of the different Indo-European languages, was composed of the following sounds:—

Vowels *ī̆*, *ū̆*, *ē̆*, *ō̆*, *ā̆*, and *ə* (the indeterminate vowel).
Semivowels *i̯*, *u̯*, *r*, *l*, *m*, *n*.
Labials *p*, *b*, *ph*, *bh*.
Dentals *t*, *d*, *th*, *dh*.
Palatals *k̂*, *ĝ*, *k̂h*, *ĝh*.
Velar Gutturals *q*, *g*, *qh*, *gh*.
Spirants *s*, *z*, *j*, *v*.
Liquids, when consonantal written *r*, *l*,
when sonant *r̥̄̆*, *l̥̄̆*
Nasals, when consonantal written *n*, *m*,
when sonant *n̥̄̆*, *m̥̄̆*.

Indo-European vowels.

It will be noticed that the original Indo-European language is said to have possessed the three vowels *a*, *e*, *o*. This is the theory now accepted by the best authorities on the subject.

Theory of Bopp.

The earlier philologists, however, from the time of Bopp, observing the fact that the Sanskrit frequently has *a* where the European languages shew *e* or *o*, assumed that *e* and *o* were later weakenings of *a* in the several European languages. Noticing the fact that the final *as* of the Sanskrit *padas*, *pādas*, corresponded to the endings of Greek ποδός, πόδες, πόδας, it seemed natural to them to infer that the Sanskrit represented the original sound, of which the Greek shewed more recently developed variations.

Theory of Curtius.

This theory was further developed by Curtius. He established the fact that when *e* is the vowel of a word or termination in one European language, it appears also in the same place in the corresponding European languages, and that it could not therefore have been independently produced in each. Accordingly he supposed that there was a time when the European languages, as a body, had separated from their Asiatic relations but had not yet divided into the two groups of North and South European; and that

Splitting of A-sound.

in this period the vowel *a*, which they had inherited from the mother tongue, was 'split' into two distinct sounds, *a*, *e*, which thus passed from the common European speech into the various languages which sprang from it. According to this theory, the stem *bhar* (in Sk. *bharāmi*) passed unchanged into Europe, and there 'split' into the two forms *bhar*, *bher*. In the South as distinguished from the North European group there was a further splitting of *a* which resulted in the appearance of *o*; hence we have in Greek φέρω, φόρος.

This theory has been accepted up to comparatively recent times, but it has now been abandoned in favour of that which supposes *e* and *o* to be as much primitive vowels as *a*. The two great discoveries which have established this theory are those of the nasal and liquid sonants and of the velar gutturals.

Liquid sonants.

I. According to Curtius, the vowel *a* in a stem like τραπ- in ἔτραπον has split, on European ground, into the vowels *e* and *o* in τρέπω, τρόπος. If it can be shewn that the *a* in ἔτραπον is not a primitive sound at all, but a special phenomenon peculiar to the Greek language, his theory of the priority of the *a*-sound will fall to the ground. This subject will be treated at greater length when we come to speak of the liquid and nasal sonants in detail; here it will be sufficient to notice the following points.

The stem of the strong aorist is obtained from the stem of the present, in cases where the present stem contains an ε, by expelling this vowel.

Thus from the present stem πελ- in πέλ-ο-μαι we get the strong aorist ἔ-πλ-ε-το: from πέτ-ο-μαι we get ἐ-πτ-ό-μην: from πείθ-ω, ἔ-πιθ-ον: from φεύγ-ω, ἔ-φυγ-ον. In a precisely similar way from the present τρέπ-ω we ought to get a strong aorist ἔ-τρπ-ον. And there can be no doubt that this was the original form of the tense. In the Sanskrit, the liquids *l*, *r* are not merely consonantal, i. e. forming a syllable in conjunction with a vowel, but also under certain circumstances sonant, that is, capable of forming a syllable by themselves without the help of a vowel. This power they originally retained in Greek and other languages: *ἔτρπον*, if the liquid is consonantal, is unpronounceable; but in such cases the liquid became sonant and developed a vowel sound in its immediate neighbourhood, a sound which in Greek was written *α*, and hence we get the form *ἔτραπον*.

This proves that the *α* of *ἔτραπον* is a later development, viz. the peculiar form under which the vowel sound of the liquid sonant appears, in Greek and cannot therefore be the primitive form of the stem of which *τρεπ-* and *τροπ-* are later developments. In the same way we may prove that the nasals *n*, *m* are under certain circumstances sonant—though in this case, in Greek at any rate, all trace of the nasal character of the sound has completely disappeared, and the character representing the sonant nasal is identical with that used for the pure vowel *α*. Thus *ἔ-παθ-ον* is the Greek fashion of writing *ἔ-πn̥θ-ον* (cf. *πείσομαι* for *πενθσομαι*).

II. The theory of nasal and liquid sonants proves that some European *a's* are not primitive vowels; by the theory of velar gutturals it is proved that *e* is a primitive vowel.

Palatal and Velar gutturals.

In the original Indo-European language, as will be stated at greater length further on, and in Sanskrit, there were two sets of gutturals—the *Palatal gutturals* (in I.-E. *k̂*, *ĝ*, *ĝh*, *k̂h*, according to our notation, in Sk. *ç*, *j*, *h*,), which always appear in the same form by whatever sound they are followed, and the *Velar Gutturals* (I.-E. *q*, *g*, *gh*, *qh*; Sk. *k*, *g*, *gh*), whose treatment varies according to the sound before which they come. Before most vowels and consonants the velar gutturals remain unchanged in Sanskrit, but before the palatal sounds, *i*, *y*, they are replaced by the corresponding palatal consonants *c*, *j*, *h*. Thus we have from the same root *ark-ás* but *arc-ís*, *ug-rás* but *ój-īyas*, *mágh-avan* but *máṁh-īyaṁs*. Now the same change between *k*, *g*, *gh* and *c*, *j*, *h* also occurs before the letter *a*, but as a rule only where that letter corresponds to a European *e*. We have, for example, *kátaras* (*πότερος*) but *ca* (*τε*), *gharmás* but *háras* (*θερεσ-*).

These facts point to the following conclusion: that *e* is a primitive vowel of the Indo-European language, and as such is preserved in the European branches of the family; but in the Asiatic languages it became confused with *a*, and has completely disappeared as a separate sound. Traces of its original existence are seen in the fact that the Gutturals become Palatals before *a* only in those cases where *a* represents an original *e*. The *a* in *ca*, *háras*, that is to say[1], represents an original palatal vowel *e* and influences the preceding guttural in the same way as do the other palatal sounds *i*, *y*.

e and *o* primitive.

Thus it is proved that the vowel *e* existed in the original Indo-European language. But the existence of *e* implies the existence of *o*. For, as we shall see later, *e* regularly alternates both in roots and terminations in all Indo-European languages with another vowel, which in Greek and Latin becomes *o*, in the Asiatic languages *ā* in open, *ă* in close syllables.

Compare, e. g., √ *γεν*, Sk. *jan* with *γέ-γον-α*, Sk. *jajā́na*.
√ δερκ, Sk. *darç* with δέ-δορκα, Sk. *dadárça*.

That is to say, the *ă* in *dadárça* and *ā* in *jajā́na* both correspond to an original vowel alternating with the *a* (=*e*) in *jan*, *darç*, and represented in Greek by ο. The vowel therefore represented by *o* in Greek, by *ă*, *ā* in Sanskrit, must have existed in the original parent language.

By these considerations it is proved, as against Curtius, that *a*, *e*, *o* are alike primitive vowels, and existed side by side in the original Indo-European language.

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[1] This *a* representing an original *e* is often written a^e. In some books it is also written as a_1 and the Indo-European *o*-vowel as a_2 or a^o; but there seems no objection to writing both respectively as *e* and *o*, and this notation is undoubtedly simpler.

CHAPTER IV.

THE SIMPLE VOWEL-SOUNDS.

AFTER the statement of the different sounds and their alphabetic representation, we will pass on to illustrate the correspondence of the simple vowels in Latin and Greek which represent the vowels of the primitive Indo-European language.

Indo-European ă.

Indo-European ă appears in Greek as ᾰ, in Latin as ă, answering to Sanskrit ă.

An original ă is represented by the short vowel of the vocative of the *a*-declension in Greek, e.g. δέσποτᾰ, and by the suffix -ă of the instrumental singular which appears in Greek παρ-ά, ἅμ-α, etc. (for Latin, see p. 62).

An original ă is to be seen in the following words:—

ἄγω	ago.
ᾰ̓κ-ρος	ac-ies, ac-us.
δαπ-άνη	dap-es, damnum.

Damnum is for *dap-num* just as *somnus* is for *su̯ep-nus*, with which cf. Gk. *ὕπ-νος*.

σαπ-ρός	sap-or.
δάκρυ	lacrima.

Old Latin *dacruma* (Liv. Andr. ap. Paul. Fest. 68. 10).

κάπρος	caper.
ἀπό	ab.

P final is not found in Latin.

ἀντί	ante.
καμάρα	camurus.
σαλ-εύειν (for σϝαλ-)	sal-um.
κάπ-τειν	capere.
ἀξ-ίνη	asc-ia.
ἀγρός, ἀγρώστης	ager, agrēstis.

κλάζειν (for *κλαγι̯ειν*)	clango (for clagno).
μαρ-αίνειν	mal-us.
παλάμη	palma.

The medial *a* in the Greek is the neutral or indeterminate vowel *ə*.

λι-λα-ι̯ομαι for *λι-λασ-ι̯ομαι*	las-civus, Lar-es.
λάπ-τω	labrum.
λαφ-ύσσω	la-m-bo.
μάκ-αρ	mac-te.
ἄγχω	ango.
ἀγκύλος	angulus.
ἀγκών	ancus.

Ancus appears in *ancilla*, *Ancus Martius*; for the last compare the Homeric *θεράποντες Ἄρηος*.

ἀρόω	arare.
ἄνεμος	animus.
ἀμνός (from *ἀβ-νός*)	ag-nus.
ἄξων	axis.
ἄλλος (*ἀλι̯ος*)	alius.
ἀλφός	albus.
ἀρκέω	arceo, arx.

Connected with the root of *ἀρκ-έω* but showing an interchange of *ρ* and *λ* we may compare *ἀλκ-ή*, *ἀλαλκεῖν*.

ἀργός, *ἄργυρος*	argutus, argentum.
ἅλς	sal.
**ἀω* for *ἀϝι̯ω*, fut. *ἄσω*	aveo.
καλ-έω	cal-are.
ἄκ-αρον (Hesych.), *ἀχ-λύς*	aquila, aquilo.
ἅπτω	ap-tus.

For the irrational aspirate of the Greek, cf. *ἵππος* beside *equus* and *ἡμεῖς* beside *ἄμμε*.

καπ-ύω, *καπ-νός*	vap-or (for ku̯apor ?), vap-pa.
μάχ-ομαι, *μάχ-αιρα*	mac-tare, mac-ellum.
μαδ-άω, *μαδ-αρός*	mad-eo, mad-idus.
λάγ-νος, *λαγγ-άζω*	lac-sus, langueo.
ἄβιν· ἐλάτην Hesych.	ab-ies.
ἀκχός· ὦμος Hesych.	ax-illa, ala (for ax-la).
ἄχυρον, *ἄχνη*	agna.

βάκτρον	(baculum).

βάκτρον can hardly be separated from *βαίνω*, Indo-European √*g̨em*, to which it is related as *θήκ-η* to *τί-θη-μι*: initial *g̨* before a vowel cannot become Latin *b* (cf. p. 139).

κάδος	cassis (cad-tis), cadus.
ἄρθρον	artus, armus.
ἁρπάζω	rap-io, rap-ax.

In the Greek there is metathesis of the *r*, I.-E. √*sarp*.

ἄν-αλτος	alo, alumnus.
καν-άζω	cano.
φράσσω	farcio.

φράσσω for *φρακ-ι̯ω* with metathesis of the liquid (cf. Meyer, *Gk. Gr.* 259).

ἅλλομαι for *σαλ-ι̯ομαι*	salio.
ἀλκυών	alcedo.

Cf. I. 563, but Attic *ἁλκυών*, by popular etymology from *ἅλς*.

ἀράχνη	aranea.
βάρβαρος	balbus.
βάλανος (*g̥l̥-*)	glans.
γάλακτ-, *γλάγ-ος*	(g)lact- (?).
κάρταλλος, *κάρταλον* Hesych.	cartilago, crātes.
κράμβος	carbo.
μάλβαξ, *μαλάχη*	mal-va.
πάλη	palea.
πλάξ	planca (for plac-na).
πράπιδες	palpito.
χάλαζα	grando.
τε-ταγ-ών	tango, conta(g)-mino.

Original *ă* in Latin.

In all the foregoing instances in Latin the short *ă* comes in the originally accented syllable; in the unaccented syllable it always appears as *e*, at the end of a word, in close syllables (i. e. before two consonants), and before *r*. Thus we have *ἔνθα* beside *inde* (Osthoff, *Z. G. d. P.*, p. 338).

So forms like *mollitiem* are parallel to Greek forms like *ἀλήθειαν* with short *a*. As *ă* remains in Latin in nom. sing. fem. and neut. plural, it must originally have been long, and therefore in instances like *parricidă* the vocative cannot have taken the place of the nom., as an original *parricidă* would have become **parricidĕ*. *Parricidă* can only come from an original *parricidā*.

Other instances of *e* in Latin for original *a* are *párticeps* (*cap-io*), *réddere* (*dare*), *péd-e* (instrumental; cf. ἅμα, πεδά).

In open syllables before labials and *l* it becomes *u* which changes to *i*, as *ín-sulio*, *in-silio* (*salio*), *occupo* (*cap-io*). Before *l* followed by a consonant it becomes *u*, which does not change to *i* (*ínsulto*).

In other open syllables and before *ng* it becomes *ĭ*, as *contingit* (*tango*), *ádigo* (*ago*), etc.

Long Indo-European ā.

Long Indo-European *ā* appears in Greek as *ᾱ*, but in Attic and Ionic mostly as *η*; in Latin as *ā*.

The Indo-European feminine suffixes *-ā-*, *-tā-*, etc. are represented in Greek χωρᾱ-, Latin *deā-bus*, etc.

The nominal suffix -τᾱτ- (Attic -τητ-) appears in Doric, e. g. νεό-τατ-ος, Lat. *novi-tāt-is*. Other instances of *ā* original are

ἁδύς (for σϝᾱδύς)	suavis (for suād-vis), suadeo.
μάτηρ	mater.
φράτηρ	frater.
κλᾱίς (for κλᾱϝίς)	clavis, claudo.
μᾶλον	malum.
πλᾱγά	plaga.
φάμα	fama, fari.
ῑ̔-στα-μι (for σι-στᾱ-μι)	stator, stare, stamen.
χᾱμόν· καμπύλον Hesych.	hamus.
ναῦς (Ion. νηῦς, Sk. *nāús*)	navis.
ᾱ̔γέομαι (for σᾱγεομαι)	prae-sag-us.
ἇλος (for ϝᾱλος)	val-lus.
Ἀλις (for ϝᾱλις)	val-lis.
ᾱ̓χώ (for ϝᾱχώ), cf. ἰᾰχή (for ϝιϝᾰχή)	vag-io.
κλᾶρος	glarea.
ῥάδιξ	radix.

σκήπων, Dor. *σκᾱπάνιον*	scapus.
μῆχος, *μᾱχανά*	mag-nus, mājor (for māhi̯or).
νᾶ-σος, *νᾱ-ρός*, *νᾶ-μα*	nare.
φᾱγός	fagus.
πᾱ́γ-νῡμι	pac-em.

ā in Attic and Ionic.

Attic and Ionic represented the long *ā* of the above Greek instances by *η*, and employed the same letter to represent the Indo-European open *ē*, as for instance in *θή-σω*. This change from *ā* to *η* in Ionic and Attic took place before *τᾱ́s* and *πᾶσα* had arisen out of *τᾰ́νs* and *πᾰ́νσα*, which would otherwise have become *τηs*, *πησα*. On the other hand, in the dialect of Elis *ā* long in *μᾱ́*, *εἴᾱ*, *πατᾱ́ρ* represents the original open *ē* of *μή*, *εἴη*, *πατήρ*.

In the feminines of the *a*-declension where *ā* was original, Attic has only preserved the vowel after a preceding *ι*, *υ*, *ρ*, while Ionic does not go so far even as this. Homer for instance has *ἐλαίη* and *ἀγορή*. Even in Attic we have *κόρη*, *δέρη*.

Where Attic shows *οᾱ* an intervening *ι̯* has disappeared, as for instance in *πόᾱ*, answering to Homeric *ποίη*. In *χλόη* for *χλόϝη* and *βοή*, on the other hand, we find *η*.

In some instances the original long *ā* was shortened, as for instance in *ἀλήθειᾰ*, *ἀναίδειᾰ*.

We should further note that in the contracted verbs in *-αω* we have *η* for *ā* in a few verbs, e. g. *πεινῆτε*, *διψῆν*, *ζῆν*. In the case of *χρῆσθαι*, although Herodotus wrote *χρᾶσθαι*, yet the fact that the *η* remains in other dialects points to a belief that *η* was original. As a rule in Attic we have original *ā* in the present, e. g. *τιμάω*, though not in other tenses, e. g. *τιμή-σω*, *ἐτίμη-σα*.

Indo-European ĕ.

Indo-European short *ĕ* appears in Greek as *ε*, in Latin as *ĕ*. It appears in the root syllables of neuters in *-εσ-*, as for instance, *νέφ-os*, *ἔρεβ-os*, *gen-us*, etc. It also appears in present stems with middle degree of the full root (cf. p. 236), e.g. *φέρ-ω*, *fer-o*.

In Sanskrit, as has been said before, short *a*, *e*, *o* appear under the symbol *ă* alone.

ἔστι, Sanskrit *ásti*	est.
γένυς	gena.
τέ	que.
γένε(σ)ος	generis.
φέρω	fero.
δέκα	decem.
ἕζομαι (for σεδ-ϳομαι)	sedeo.
ἕδρα	sella (for sed-la).
ἀ-στέρα	stella (for ster(u)la).
κεραός (for κεραϝος)	cervus.
ἑπτά	septem.
ἕξ	sex.
μέλι(τ)	mel(t).

But cf. p. 305.

ἔδειν	edere.
ἕπομαι	sequor.
ἕρπω	serpo.
στέγ-ει (also τέγος)	teg-it.

στέγος, *τέγος*, Sk. *√sthag* may point to a double form of the root in the original language. We may perhaps compare the Homeric *τείρεα* (Σ. 485), meaning 'constellations,' with *ἀ-στήρ*.

ἔτος (for ϝετος)	vet-us.
μέσος (for μεθ-ϳος)	med-ius; cf. Sk. *mádhya*.
ἕνος	sen-ex, sen-ium.
δεξιός	dexter.
τέρμ-ων	terminus.
τείρω (for τερ-ϳω)	tero.
τρέμ-ω	tremo.
πέτ-ομαι	pet-o.
πτερόν for πετ-ρόν	penna (for petsna, cf. pesna, Fest. 205. 209).
πέδ-η	im-ped-ire.
πέλλα	pellis.
νέποδες, ἀνέψ-ιος	nepos.

πλέκω	plexus.
λέγω	lego.
ὀ-ρέγω	rego.
λέων	leo.
ἕω (*ὦ*)	ero.
χθές	heri, hesternus.
φρέ-αρ	fervere.
κέρ-αμος	cremare.
ἀ-ϝέντα	ventus.
πεν-θερός	of-fendix.
θείνειν	fendere.
ϝερέω	ver-bum.
ἀπό-ϝερσε	ver-rere.
νέκυς	nex.
μείρομαι (for *μερϳομαι*)	mereo.
μέν-ος	mens.
πεζός (for *πεδ-ϳος*)	ped-ester.
ϝέριον	vel-lus.
ϝεσθής	ves-tis.
σειρά (for *σερ-ϳα*)	sera.
ϝέσπερος	vesper.
ἐϝέργειν	vergo.
νεφέλη	nebula.
-*τερο*- of comparatives	i-teru-m.

The *ε* was pronounced open like *ă* in the dialect of Elis, as we see from the representation of the sound on inscriptions, e. g. *εὐσαβέοι* for *εὐσεβοῖ*.

ĕ in Latin.

ĕ remains unchanged in Latin before *r*, at the end of a word, and before double consonants. But in an originally unaccented syllable before a single consonant it passes to *i* (*cólligo—lego, ágimini—ἀγόμενοι*), and also before -*gn*- and before nasals followed by gutturals (see p. 73).

Indo-European *ē*.

Indo-European *ē* appears in Greek as *η*, in Latin as *e*, in

ἡμι-	semi-.

νῆ-μα	nemen.
ἀμφ-ήρης	re-mus.
ἵ-η-μι, ἧ-μα	semen.
μην-ός (Aeolic *μῆννος* for *μην-σος*)	men-sis.
τι-θή-νη, θῆ-λυς	fe-mina, fe-lare.
εἴης (for *ἐσ-ι̯ης*)	sies (old Latin for sis).
πλή-ρης, πίμ-πλη-μι	ple-nus.
ἐδ-ηδ-ώς	ēd-imus.

ē in Latin.

In Latin *ē* appears to become *ī* in *fīlius* (cf. *fē-mina*), *subtīlis* (cf. *tēla*), *delinio* (*lēnis*), *suspīcio* (*spec-*), *convīcium* (*ϝέπ-ος*, Indo-European √*u̯ĕq*). But the first two may be instances of the 'balancing power of *l*' (p. 71), and in every case there is an *i* in the following syllable. *Delinio* and its derivatives often appear in MSS. as *delenio*, etc. If the *i* is correct, the word is perhaps best connected with *līnum*.

Indo-European *ŏ*.

Indo-European *ŏ* appears in Greek as *ο*; in Latin as *ŏ*; in the northern languages it has been confounded with *a* and the indeterminate *ə*.

Short *o* is to be found in the stem of the perfect, as in

δέ-δορκ-ε mo-mord-it.

It appears in the root syllable of the *O*-declension,

λευκο-φόρ-ος, *ὄχ-ος*, *τόν-ος*, proc-us (prec-or).

and also as the thematic vowel of the present tense,

Sk. *bhára-nti* *φέρο-ντι* cf. vīvo-nt.

Other instances are

ὄζειν (for *ὀδ-ι̯ειν*), *ὀδ-μή*	odor, ol-ere.
ὄρνυμι	orior.
ὄλλυμι	ab-ol-ere.
ὀκτώ	octo.
δόμος	domus.
κόραξ	corvus.
βορά	vorare.
κολωνός	collis.
στόνος	tonare.
πόσις, πότ-νια	potis.

ὄψ-ομαι, ὄμ-μα	oc-ulus.
ὀστέον	os.
κόκκυξ	coxa.
στόρ-νυμι	stor-ea, torus.
ῥόδον	rosa.
μόλις	molestus.
κορωνίς	corona.
ὅλος (ὀλϝος, cf. Epic οὖλος)	sollus.
ὀρφανός	orbus.
ὄφελος	opulentus.
πρό	prō.

Lengthened as a monosyllable, cf. Eng. *fro-ward*.

μόννος	monile.
βροτός (cf. μορτός, Callim. *Frag*. 271)	mor-ior.
ὀνοτός	nota.
βόθρος	fodio, fossa.
ὀπ-άων (cf. ἀ-οσσητήρ for ἀ-οκ-κ̯η-τήρ)	soc-ius, cf. sequ-or.

ŏ in Latin. Unaccented ŏ in Latin regularly becomes ŭ (e.g. *fili-us*), except after *u* and *u̯*. At the end of a word it becomes -ĕ, e.g. *sequerĕ* = ἕπε(σ)ο. In accented syllables before two consonants, especially if the first be a nasal, it often becomes *u* (*uncus*—ὄγκος, *umbilicus*—ὀμφαλός).

Indo-European ō. Indo-European long ō appears in Greek as ω; in Latin as ō:

δῶρον	donum.
νῶϊ	nos.
γι-γνώ-σκω	(g)nosco.
γνω-τός	no-tus.
ὠκ-ύς	oc-ior.
κρώζω	crocio.
κλώζω	glocio.
ᾠόν	ovum.
κῶνος	cos.
πῶ-μα (cf. Aeolic πώνω)	po-culum, po-tus.
ῥώ-νυμι	ro-bur.

μῶρ-ος	mor-osus.
ἐ-ρω-ή	ros.

Cf. A. 303 *αἷμα ἐρωήσει περὶ δουρί* for *ἐρωέω* in sense of 'gush' or 'flow.'

βῶς, Doric	(bos).
πλω-τό-ς (*τ.* 122 *δάκρυ πλώειν*)	plorare.

Long *ō* appears in the ablat. sing. of *O*-stems: *ὧδε*, *πῶ* (*ποῦ*, *Δωριεῖς* Hesych.), *ὧ* Locr. (=unde), Lat. *Gnaiv-ōd*; in the 1st sing. of the thematic present,

φέρ-ω	fer-ō;

and in the terminations

-τωρ	-tor.
μεμά-τω	memen-to.

Dialectic ω.

A long *ω* was in Greek developed dialectically out of short o from different reasons. Thus *τόνς*, the accus. pl. masc. which we find in the Cretan dialect, becomes in Doric *τώς*, but in Attic and Ionic *τούς*. An original *κορϝος* passed after the disappearance of the *ϝ* into Doric *κῶρος*, Epic *κοῦρος*, but Attic *κόρος*. These phenomena will be dealt with at length under vowel-combinations (p. 185).

ō in Latin.

ō sometimes appears in Latin as *ū*; cf. *da-tūr-us* beside *datōr*, *fūr* beside *φώρ*, *huc* for *hōd-ce*. This change is unexplained.

The Indeterminate Vowel[1].

A vowel is sometimes developed, both in Greek and Latin, between two consonants. But this vowel differs from the vowels proper *a*, *e*, *o* in the fact that it has no definite character of its own; and that while we may say that under ordinary circumstances it is represented by *ă*, yet it is largely influenced by the nature of the neighbouring vowels, or by the analogy of kindred forms of the same root. For instance, according to analogy, the weakest form of the root *dō* should be *d-tós* (see p. 236). But such a sound is unpronounceable. The Sanskrit under these conditions sometimes assimilates the two consonants, and we get *dēvá-t-ta* for *dēvá-d-ta*. In Greek assimilation is not carried to such great lengths;

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[1] Compare throughout the following pages Havet in *Mém. Soc. Ling.* vi. 17 sqq.

δ-τός could only become τ-τός and τός, which offers no apparent connexion with the form δί-δω-μι. Accordingly the Greeks inserted a vowel between the two consonants, which in this instance, on the analogy of ω and ο of the other forms of the root, takes the form ο, and we get δοτός. But in Latin the more ordinary representation of the indeterminate vowel by *a* is seen in *dă-tus*. The same indeterminate vowel appears in Sk., where it is called a *svarabhakti* vowel, and appears as *ĭ*. In the notation of the I.-E. alphabet we write it *ə*, and speak of it as the I.-E. *schwa*.

As instances of the indeterminate vowel in the weakest degree of roots we may give—

I.-E. *sth-ə-tós*	√*stha*	Sk. *sth-i-tás*	στ-ᾰ-τός	st-ă-tus.
d-ə-tós	√*do*	*á-d-i-ta*	δ-ο-τός	dă-tus.
	√*sē*		ἑ-τός	să-tus.
pə-tér		*pi-tár*	πᾰ-τήρ	pă-ter.
gl, *gəl*			γ-ά-λοως	glō-s.
ghl, *ghəl*			χ-ά-λαζα	gra-n-d-o.

The same vowel appears inserted between the root and the termination in cases where it is difficult to say whether it is to be regarded as part of the root or not (see p. 115).

Thus Sk. *duh-i-tár*	θυγ-ά-τηρ.	
dam-i-tá	ἀ-δάμ-α-τος	dom-i-tus.
vam-i-tá	ἐμ-ε-τός	vom-i-tus.
jan-i-tár	γεν-ε-τήρ	gen-i-tor.
	παλ-ά-μη	pal-ma.
	ὠλ-έ-νη	ul-na.
	κολ-ο-κάνος	cracentes.

Old Latin for *gracilis*, cf. *Gracchus*.

ἄν-ε-μος	an-i-mus.
τελ-α-μών	ter-mo.
φέρ-ε-τρον.	
φέρ-τρον.	

φέρτρον is to be considered the older form rather than a contraction for φέρετρον.

The above instances show that the precise sound which represents the indeterminate vowel in Greek is almost a matter of accident, or at any rate that the laws that determine it are not very well defined.

In Latin it may be said roughly that the indeterminate In Latin vowel becomes *u* before *l* and *m*, *e* before *r*, *i* before *n*.

Thus compare

vit-u-lus, for vit-lus, with ἰτ-α-λός.
pat-u-lus with πέτ-α-λος.
saec-u-lum, vinc-u-lum with saeclum, vinclum, which are to be considered as the older forms.
pop-u-lus with Old Latin poploe, cf. publicus, Poplicola.
Herc-u-les with me-hercle.
um-e-rus with ὦμος (for ὀμ-σος?), cf. num-e-rus.
inf-e-rus with infr-a.
ag-er for agr, agr̥, with ἀγρ-ός, agr-estis.
vol-u-p with ϝέλπ-ομαι.
h-u-m-i with χαμαί for χm̥μαί; the strong root comes in homo for hem-o (cf. sēmo = *se-hemo).
s̥-u-mus with Sk. *s-más*.
vol-u-mus with vol-t.
col-u-mn-a, col-u-men with culmen.

We may add the Plautine *discip-u-linae*, *nomenc-u-lator*, and *singuli*, Indo-European *sm̥k-ló*.

In borrowed words we get *drach-u-ma*, *Tec-u-messa*, *Aesc-u-lapius* (Αἰσκληπιός), *m-i-na*, *daph-i-ne*. So *ac-i-nus* : ὄχν-η, *as-i-nus* : ὄνος for ὄσνος (? Semitic word).

We may also compare the termination *-i-nus* in *dom-i-nus* Gk. *-ανο-* for original *-n̥no-*. So in *nom-i-nis* the old form would be *nom-nós*, but here the analogy of the nominative is operative (*nom-en* for **nom-n̥*).

As a special feature under this head we may notice what Balancing has been called the 'balancing power of *l*,' i.e. the tendency power of l. of this letter when standing between two short vowels to assimilate the vowels on either side. In *calamitas* the first *a*, whatever we connect the word with, is original; but when the second *a* changes to *u* in composition, the first is assimilated to it and we get *incolumis*, not *incalumis*. Medial *ĕ* unaccented passes to ĭ (*émo* but *rédimo*); nevertheless we have *elephántus*, *eleméntum*, not *eliphantus*, *elimentum*. Similarly ă before a labial becomes ŭ (*aúcupo*), yet we find *álapa*, not *álupa*. This will explain *volumus*, rather than **volimus* like *regimus*, and the whole group of adjectives in *-ilis*, *-ulus*; cf. *similis*, but *simulo* (ὁμαλός).

In *sŭmus* the ŭ does not pass to *i*, because it is in an initial syllable (cf. *tŭmet*, *lŭbet*, as opposed to *maxĭmus*); *quaesŭmus* is archaic and pedantic, and is preserved just as the same pedantry has prevented *Poeni*, *moenia* from becoming **Pūni* (*Pūnicus*), **mūnia* (*mūnio*).

Correspondence of simple vowels in Greek and Latin.

So far we have proved that in ordinary cases Greek *α*, *ε*, *ο* correspond to Latin *a*, *e*, *o*. But this law has to be modified by the special phonetic laws of both languages, or the alterations which these vowels undergo independently in both languages through the influence of the neighbouring sounds. These alterations are specially frequent in unaccented syllables. In accented syllables and at the beginning of a word, the stress necessarily laid upon the vowel tended to preserve its character; in unaccented syllables the vowel-sound was slurred over and approximated to the sound of the indeterminate vowel. It was therefore very much at the mercy of the neighbouring vowels and consonants.

The following are some of the most important phonetic changes between Greek and Latin:

Greek ο in Latin, *u*.

1. The *ο* of Greek nom. sing. of masc. stems in -*ο* and neuters in -*ος* became in Latin *u*, except where it was preceded by *u*:

e.g. γένος : *genus*, *-vorus* : -βόρος,
but *equos* : ἵππος.

And generally we may say that an unaccented ŏ becomes in Latin ŭ, as an unaccented ă becomes ĕ (ἔνθᾰ but *indĕ*, p. 62), and an unaccented ĕ becomes ĭ (λύ-εις for *λυ-ε-σι, *-lu-is*).

2. A Greek *ο* often becomes in Latin ŭ, especially before a nasal followed by a guttural,

ὄγκος : uncus. -cunque : quondam.
ὄν-υ-ξ : unguis. nuncupo for nom(i)cupo.

σφόγγος : fungus (borrowed). gungrum : γογγρός (?).
δόν-α-ξ : junc-us. { lungus (for longus) is vouched for by Ital. *lungo*, Fr. *loin*.
honc : hunc.

Oncare is borrowed from ὀγκάομαι, but we also find *uncare*. *Tongitio*, *tongere* show the rare *-ong-*, but the former is of the Praenestine dialect; the latter only occurs Fest. 356.

The same change of *o* to *u* seems to occur in the neighbourhood of gutturals, cf. *luxus* : λοξός (but *nox* : νύξ), and labials (ὦμος : *umerus*, ὀμφαλός : *umbo*, νόμος : *numerus*) but with liquids, (φύλλον : *folium*, θύρα : *fores*, μύλη : *mola*). With long vowels we have *fūr* : φώρ, *ulna* : ὠλένη, *hūc*, *illūc* for *hōc*, *illōc*; cf. *quō*. Add *fŏre* : φύω, *storax* : στύραξ, (but *ululare* : ὀλολύζειν) and the borrowed words *amurca* (ἀμόργη), *funda* (σφενδόνη) by popular etymology from *fundo*.

3. As in Latin *ŏ* becomes *ŭ* before *gm*, *gn*, or a nasal followed by a guttural, so *ĕ* becomes *ĭ* in—

lig-num[1] : lego.
tig-num : tego.
signum : in-sec-e.
dig-nus : dec-et.
pinguis (for pn̥guis) : παχύς.
quinque for penque : πέντε.
ignis, Sk. *agni*; Indo-European *n̥gnis*.
beni-gnus, mali-gnus : bene, male.
septingenti for *septm̥-ḱn̥t-i* (for *g*, cf. p. 112).
lingua, dingua for *dn̥gu̯a*, Germ. *Zunge*.

In *abi-e-gnus* the *e* is due to the preceding vowel being *i*, cf. *abi-et-is* but *mil-it-is*.

There are very few cases of *-egn-*, *-egm-* in Latin, and in most of them the vowel is long: *sēgnis*, *rēgnum*, *tēgmen*, *obtēgmina* (cf. *tēctus*) have the apex over the *e* in inscriptions; and perhaps *segmen* may also have the first vowel long.

The Greek simple vowels. The Greek vowels are in the main regular in their representation of the sounds of the original speech, but in the different dialects we occasionally find a difference of treatment. In some instances, such as ἵππος, Lat. *equus*, we find an irregularity common to all Greek dialects (cf. p. 75).

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[1] Priscian's statement (ii. 63) that every vowel followed by *gn* is long is not borne out by the evidence of the Romance languages.

α and ε. We find that vowel-sounds in the immediate neighbourhood of a liquid or nasal vary in their representation in different dialects, just as the vowel-sound of a nasal or liquid sonant was indeterminate in its character, and therefore at times varying in its representation.

Thus in place of ε we find α in—

τράπουσι (Hdt. i. 63) beside Attic τρέπω.

Megarian τράφεν (Ar. *Ach.* 788) beside Attic τρέφειν.

Similar instances are τράχω and στράφω for Attic τρέχω, στρέφω. These we may compare with the common Greek γράφω.

Locrian φάρειν	Att. φέρειν.	
Elean Ϝάργον	Att. ἔργον.	
Att. βάραθρον	Ep. βέρεθρον	Arcad. ζέρεθρον.
Dor. Ἄρταμις	Att. Ἄρτεμις.	
Att. βάλλω	Arcad. ζέλλω, ἐσδέλλοντες.	
Att. ἄρσην	Ion. ἔρσην.	

J. Schmidt (*K. Z.* 25. 23) regards this variation as a proof that the original inflexion ran ἔρσην, gen. ἀρσενός.

Other instances sometimes without a neighbouring nasal or liquid are—

Boeotian γά beside Attic γέ.—Dorian κά, Ep. κέν.—Dor. πόκα, ἄλλοκα, Lesb. ἄλλοτα beside Att. πότε, ἄλλοτε.

εἶτα, ἔπειτα, ἕνεκα beside εἶτεν, ἔπειτεν, ἕνεκε on Attic inscriptions (Meyer, *Gk. Gr.* § 24).

ε and ο. We find an interchange of ε and ο in—

Lesbian ἔδοντες beside Att. ὀδόντες.

ἔδοντες was probably connected with ἔδομαι by popular etymology. The ο of ὀδόντες is probably prothetic.

Att. ὀβολός Boeot. ὀβελός Cret. ὀδελός.

The original ε has in Attic been assimilated to the other vowels.

Att. Ἀπόλλων   Doric Ἀπέλλων.

The etymology of the word is obscure. Professor Sayce (*Intr. to Science of Language*, i. 319) explains Ἀπόλλων as for Ἀ-κϝολλων (? Ak^u ολλων) and connects it with πέλομαι, Sk. √*car*, making it mean 'the son of the revolving one.'

o and a.

o and *a* interchange in—

Cretan ἄναρ, Hesych.   Attic ὄναρ.
ἀγκόλαι, Hesych.   Attic ἀγκάλαι.
ἀρρωδέω, Hdt.   Attic ὀρρωδέω.

We may compare the representation of a liquid sonant in Aeolic by *o*, e. g.

στροταγέω, Νικόστροτος : Att. στρατός.
βροχέως, Sapph. 2. 7.   Att. βραχύς.
κόρζα· καρδία, Πάφιοι is a gloss of Hesychius.

ι and ε interchange in—

Arcad. and Cyprian ἰν   Att. ἐν.

Epic ἰγνύη (N. 212) is perhaps a compound of ἐν-.

Ion. ἱστίη   Att. ἑστία.

ι appears in place of ε in Greek—

ἵππος : cf. *equus*; Sk. *açvas*.
πίτνημι beside πετάννυμι.
σκίδνημι beside σκεδάννυμι.
λικριφίς beside λέχριος.

In ἵππος, Lat. *equos*, the alteration of the ε may be due to the influence of the following guttural which is labialised. πίτνημι and σκίδνημι perhaps follow the analogy of κίρνημι, πίλναμμαι (beside κεράννυμι and πελάζω), where ιρ, ιλ represent a liquid sonant. In λικριφίς the change of ε to ι may be explained as an assimilation to the character of the succeeding vowels. For ι in the neighbourhood of a guttural consonant we may compare ἰ-χθύς, ἴ-κτις, where the ι is probably prothetic. A coefficient ι is also to be found in ἴ-σθι the imperative of εἰμί (Osthoff, *K. Z.* 23. 579).

In many of the non-Ionic dialects ε passes into ι before the vowels *o* and *a*, and in the Boeotian dialect sometimes before ει—

Att. θεός   Boeot. θιός   Lacon. σιός.
Att. ἐγώ   Boeot. ἱών.

So in the contracted verbs in εω- Aristoph. *Lysist.* gives the Laconian forms ἐπαινίω, μογίομες, ὑμνίωμες : and in the future of liquid and nasal stems we have ἐμμενίω.

Aeolic *υ*. The grammarians regarded a change to *υ* as especially a mark of the Aeolic dialect. Thus Epic *ἄμυδις* (cf. *ἅμα*), *ἄλλυδις* (*ἀλλο-*), *ἐπασσύτεροι*, *πύματος*, *αἰσυμνήτης* (*αἶσα-*) were accounted as Aeolisms.

Other instances of the appearance of *υ* in close connexion with a liquid are *διαπρύσιος*, *πρύτανις*, *πρύμνα*, *πρυλέες* (*πρό*), *ὑπόβρυχα* (*βροχ-*).

CHAPTER V.

DIPHTHONGS AND SEMIVOWELS.

Glides and transitional sounds.

SPEECH sounds can be considered either separately, i.e. apart from the combinations in which they occur in actual speech, or they can be considered as they appear actually combined in words and syllables. In passing from one spoken sound to another there are glides or transitional sounds for which there are no fixed alphabetic symbols. The acoustic effect depends upon the force and rapidity of pronunciation. If the breath passes before vocalization, there ensues a gradual beginning; if the breath is held back till the moment of vocalization there is a clear beginning as in singing. If stress is laid upon the initial glide in the gradual beginning we have the rough breathing *h*. Similarly the vowel endings can be clear, gradual, or stressed as in the case of the Sanskrit *visarga*. Where vowels succeed one another in different syllables, the second is introduced by a fresh effort of exspiration, which can be either the smooth or rough breathing. The frequent instances of the contraction of neighbouring vowels in Greek and Latin show that the intervening glide was soft and scarcely perceptible, and this is incompatible with a check of the voice or a rough breathing. Apart from the succession of vowel-sounds upon one another, there are monosyllabic combinations of vowels, both those which are known as diphthongs, and those in which a semivowel is followed by other vowels.

Diphthongs.

By a diphthong we understand a combination of two simple vowels, the first of which carries the stronger accent, pronounced in a single effort of the breath. Alphabetic symbols sometimes stand in the way of the recognition of the true diphthongal sound. In the English '*he*' the sound is really diphthongal and may be represented by *-iy-*, while the sound of '*who*' is represented by *uw* (cf. Sweet, *Handbook of Phonetics*, § 209).

Proper and improper diphthongs.

Diphthongs have been usually divided into proper and improper. To the first group belong such combinations as *ai*, *ei*, *au*, *ou*, that is, the diphthongs whose second component involves a closer narrowing of the mouth than the first; while in the second group the conditions are exactly reversed, and the *i* and *u* come first. Historically speaking the diphthongs of the Indo-European languages had *i* and *u* in the second place, while the so-called improper diphthongs first developed at a later date out of monosyllabic *e* and *o*. Besides this there is a physiological justification for the distinction in the fact that the *i* and *u* have less fulness of sound, and so fall naturally into the subordinate place.

Quantity in diphthongs.

There is no limit to the variation of quantity in the components of a diphthong. For instance the first component is short in the *ai* of '*high*' and *au* of '*now*,' long in '*he*' and *who*. So too we may compare the old Greek ᾳ, ῃ, ῳ, ᾱυ, ηυ, ωυ with ᾰι, ει, οι, ᾰυ, ευ, and in Sanskrit the *guṇa* (*e*, *o*), and *vṛddhi* (*āi*, *āu*) diphthongs. We may say then that a diphthong is composed of a sonant or syllable-forming letter followed by a semivowel. A complete list of diphthongs gives us

ăi āi, ĕi ēi, ŏi ōi.
ău āu, ĕu ēu, ŏu ōu.

These have been more faithfully preserved in Greek than in the related languages. In Sanskrit we have *e*, *o*, *āi*, *āu*. Of these *e* and *o* are regarded as the corresponding *guṇa*-vowels to *i* and *u*, that is, strengthenings of *i* and *u*, while *āi*, *āu* are instances of a still higher increment of *i* and *u* and represent the corresponding *vṛddhi*-vowels.

The Greek *upsilon* was a modified sound, as we can see from the transcription of the full Latin *u*, e.g. *Lūcius* becomes in Greek not Λυκιος but Λούκιος. The Boeotians still further modified υ to ι. But in the diphthongs υ possessed a fuller sound, and the Roman transliteration of Μοῦσα was *Musa*.

Indo-European ai̯.

Indo-European ăi̯ = Greek *αι*, Latin *ai*, *ae*.

αἴθω	aedes, aestas, aestus.
αἰϝών	aevum.
αἶσα	aequus.
λαιός	laevus.
σκαιός	scaevus, ob-scae(v)nus, Scaev-ola.
ναί	nae, nē.
παραί	prae.

Latin ai in unaccented syllables.

In originally unaccented syllables *ai* becomes in Latin *ī*, as in *ín-quīro* beside *quaero*, *éx-īstumo* beside *áestumo*, *ménsīs* for *ménsais*. So *si* as a proclitic is unaccented, like the Greek *αἰ*, and stands for an original *su̯ai̯*. Compare Oscan *svaí*, *svae*, Umbrian *sve*, Greek *αἰ*, *αἴθε*.

Indo-European au̯.

Indo-European au̯ = Greek *αυ*, Latin *au*.

ταῦρος	taurus (if not a borrowed word).
παῦρος, *παύω*	paucus, pauper, paullum.
σαυχμόν· ἀσθενές Hesych.	saucius.
καυλός	caulis.
γαῦρος	gaudere.

Here we are really dealing with *āu*; cf. *gāvisus*: but the *ā* is shortened before the semivowel followed by a consonant.

θραύω	fraus.
σταυρός	instaurare.
αὖ, *αὖτις*	autem.
ἀπο-λαύω	Laverna.

In originally unaccented syllables in Latin *au̯* becomes *ū*; *fraudor* but *défrūdo*, *claudo* but *cónclusus*, etc.

Indo-European ei̯.

Indo-European ei̯ = Greek *ει*, Latin *ei*, which in early times becomes monophthongous and is written *ī*.

δείκνυμι	deico, dīco.
κεῖμαι	ceivis, cīvis.

εἶμι	adeitur, adītur.
πείθειν	fīdo.

In inscriptions we find *ei* used to represent a long (close) *ē*, as in *leigibus*, *pleibes*, or a long (open) *i*, as in *veivos*, *faxseis*. But these are rather graphic representations of a particular pronunciation of the simple long vowel than true diphthongs.

Indo-European eu̯.

Indo-European *eu* = Greek *ευ*, Latin *ou*, which becomes *ū*, and sometimes *ō* (p. 87).

A true Latin diphthong *eu* is only found in the *Leucesie* of the *Carmen Saliare*.

λευκός,	Old Latin loumen, Loucina. Classical lūmen, Lūcina.
εὕω	ūro, ūr-na.
εὕδω	sūdum.
ζεῦγος	jūgera.
ἐ-ρεύθ-ω	rūfus, rōbigo.

But these words may come from the Italian dialects, as a medial *θ* should be represented in Latin by *d* (p. 148).

πλεύ-σομαι	plōrare.

So Πολυδεύ̯κης is transliterated Polouces, Polluces, Pollux.

Indo-European oi̯.

Indo-European *oi̯* = Greek *οι*, Latin *oi*, *oe*, which in classical times becomes *ū*, e.g.

οἴνη	oinvorsei, oenus, ūnus.

But in final (unaccented) syllables *oi* becomes in Latin *ī*, e.g.

τοί	ís-tī.
ἵπποις	équīs from equŏi̯s, equōi̯s.

The *i* of *qui* comes from its accentuation as an enclitic, *sí qui*, *áliqui*; *hī* may be on the analogy of *ísti*, etc.

Other diphthongs.

So far we have dealt with instances of diphthongs which we may assume to have existed in the original language, but to these must be added the diphthongs which arose from changes of sound within the limits of the separate languages. In Greek for instance diphthongs arose from the coming together of two vowels after the disappearance of an intervening spirant or semivowel, and appear as the result of contraction and epenthesis. The graphic representation of the Greek diphthongs so produced was the same as that of the original diphthongs, but the sound was not in all cases the same. Thus the sound of the original Greek diphthongs *ει* and *ου* was, as we shall see, not the same as that of the *ει* and *ου* which resulted from contraction, epenthesis, or compensatory lengthening (cf. p. 179).

From *γαυ̯-ι̯ω* we get *γαίω*.
καυ̯-ι̯ω *καίω*.
παυ̯-ι̯ω *παίω*.
κλεϝ-ι- *κλει-τός*.
γενεσος *γένους*.
ἱπποσι̯ο *ἵπποιο, ἵπποο, ἵππου*.
τρει̯-ες *τρεῖς*.

In all these instances an intervening spirant or semivowel has disappeared, leaving a diphthong, either with or without contraction of the vowel-sounds so brought together.

With the phenomena of Hiatus, Elision, and Contraction as a whole we shall deal when we treat of Sound Combinations.

Epenthesis.

Diphthongs are also the result of *ι̯* and perhaps *υ̯* Epenthesis. Thus where a syllable ending in *λ*, *ρ*, or *ν* is followed by an *ι̯* sound, this *ι̯* vanishes after palatalising the preceding syllable which itself develops an *ι̯*[1] (cf. p. 197).

μελανι̯α *μέλαινα*.
κερι̯ω *κείρω*, etc.

In the Lesbian dialect a diphthong with *ι* is developed before *ς* in cases where a nasal has disappeared. Other dialects show a compensatory lengthening of the vowel:

τονς Attic *τούς* Lesbian *τοίς*.
ἀκουσᾰντς Attic *ἀκούσᾱς* Lesbian *ἀκούσαις*.

Pronunciation of diphthongs.

To pass on now from the question of the origin of diphthongs to the history of their pronunciation in Greek, a comparison of the different dialects at different stages gives the following results.

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[1] This infection of a preceding syllable by a following vowel is common in Anglo-Saxon (cf. p. 21), and especially in Old Irish where the original termination has to be inferred from the effect it has had on the preceding syllable, e. g. Latin *equi*, in Old Irish *eich*.

αι. *αι* in Greek answers to *ae* in Latin, and was the Greek transcription of the Latin sound.

In Boeotian inscriptions of the fifth century *αι* is represented by *αε*, as can be seen in such instances as *Αἐσχρώνδας*, *Λυσανίαε*. *Αἐθρη* for *Αἴθρη* appears upon a vase of unknown origin, but the alteration of *αι* is probably due to Roman influence. After the reception of the Ionian alphabet the Boeotians wrote *η* for the diphthong *αι*. Thus for *ἱππόται*, *ἱππότη* : for *Θηβαῖος*, *Θειβῆος*. At a still later date the Boeotians employed *ει* to represent this sound, as in *'Αθανεῖος*, where the *ει* was pronounced as close *ē*.

The same change in all probability went on in other dialects, and is indicated by the criticism of Socrates in Ar. *Nub.* 872:

ἰδοὺ κρέμαι', ὡς ἠλίθιον ἐφθέγξατο
καὶ τοῖσι χείλεσιν διερρυηκόσιν.

We have an interchange of *αι* and *ει* in the conditional particle in Homer, where *εἰ*, *εἶθε*, stand side by side with *αἰ*, *αἶθε*, but in this case the Oscan *svaí* seems to point to *αἰ* being distinct in origin. For Attic *κτείνω*, *φθείρω*, Doric has *κταίνω*, *φθαίρω*, at least according to the grammarians (Ahrens 2. 186). The meaning of this interchange we cannot determine.

ει. The Diphthong *ει* seems in its pronunciation to have approximated to close *e* as in German *See*. In Ionic and Attic it was still a diphthong at the beginning of the fifth century, but afterwards passed to the *ē*-sound, and in the third century B.C. to *ī*, as it is pronounced now in Modern Greek. The change is seen earliest in the Boeotian dialect. Thus for original *ει* we have *ῑ* in *ἀΐδω*, *Δῑνίας*, *γίτων*.

In our editions of the Greek authors many words appear in this later form, as for instance *τίω* for *τείω* and *ἱμάτιον* for *εἱμάτιον*. The Doric *εἴκω* is older than Attic *ἴκω*, *νείφειν* than *νίφειν*. We can here notice too that the quantity of *ι* of the Homeric dative points to an originally fuller termination either in *-ει* or *-αι*, as for instance in *Αἴαντῑ*, *μήτῑ*, *Διῑπετής*. There is also a variation in the quality and quantity of the ending of the modal adverbs, e.g. *ἠρεμεί*, *ἀναιμωτί*, *μεγαλωστί*, and of the penultimate syllable in *ὠφέλεια*, *ὠφελία*, Ἑρμείας, Ἑρμέας, etc. Attic has χίλιοι for the χείλιοι of Ionic inscriptions. The Latin transcription wavered: we have *Aeneas*, *Galatea*, *Sigeum*, but *Nilus and Chiron.*

An unexplained representation of the diphthong by *ε* is to be found in the Herodotean *ἀπόδεξις*, *ἔδεξα*, etc. as well as in the word *πρέσβυς*, Lat. *pris-cus*, for which in the Cretan dialect we have *πρεισγευτᾶν* as well as *πρειγίστοι*, *πρείγονα*, etc.

The sound of *οι* can be represented by the sound of English *οι.* *boy*. Its distinction from *ῑ* can be illustrated by the difference of λοιμός, λιμός as quoted in the oracle (Thuc. ii. 54). In old Boeotian inscriptions we find *οι* represented by *οε* as in Διωνύσοε, Κοέρανος. After the end of the third century the Boeotians rendered *οι* by *υ*, although they always styled themselves Βοιωτοί. The process of change seems to have been from *οι* to *υι*, as in the Lesbian locatives *τυῖδε*, *πήλυι*, which come in Sappho, after which it passed to *ü*. The progress of itacism has led to modern Greek *ι*.

The long diphthongs *ᾱι̯*, *ε̄ι̯*, *ο̄ι̯*, were not in all probability **Long diphthongs.** frequent in Indo-European. In the Greek *ᾱι*, *ηι*, *ωι*, the first component is long and in the later MSS. *ι* was written underneath, as in *ᾳ*, *ῃ*, *ῳ*. The long diphthongs are original in the datives *ἵππωι*, *μούσᾱι*: elsewhere they have arisen through the lengthening of short vowels, e.g. *αἰσθάνομαι*, *ᾐσθόμην*, *λέγεις*, and subj. *λέγῃς*. In the first century B.C. the second component was no longer sounded in the Attic, and, as was already the practice in other dialects, was no longer written. False analogy has led to the subscription of iota in such instances as *οὕτω*, *ὀπίσ(σ)ω*, *προτέρω*. These original ablatives or instrumentals were understood to be datives and so the iota subscript was added in the manuscripts.

The union of the long hard vowels *α*, *η*, *ω* with the semivowels *υ* in a diphthong can be seen in *ναῦς*, Epic *νηῦς*, Latin *nāvis*, where the *α* was originally long. Attic has shortened the long *α* of this diphthong in *θαῦμα*, *ἔκαυσα*.

Similar shortening has taken place in the words Ζεύς, Sk. *dyāús*, and βοῦς, Sk. *gāús*, Doric βῶς.

In the augmented tenses of verbs beginning with ευ we have ηυ-, as in ηὗρον, ηὕδα.

The sound ωυ which comes in ὡὑτός (E. 396), and the ὡὑτός, σεωυτοῦ, etc. of Herodotus is the result of Crasis and is not original. Its appearance in the forms θωῦμα, θωυμάζω, is peculiar to Herodotus.

Short diphthongs αυ, ευ. In the short diphthongs αυ, ευ, we probably have the *u*-sound full and not narrowed and modified as in ὖ ψιλόν.

In Ionic inscriptions εο replaces ευ, but εο as one sound by synizesis is a close neighbour of the diphthong ευ.

On the other hand ευ replaces εο in such instances as ποιεῦνται, κατοικεύντων in Ionic. The difference between the two becomes almost a mere question of orthography. Similarly we also find on Ionic inscriptions αυ represented by αο.

αυ, ευ have had a common development. The second component vowel has become consonantal till finally in Modern Greek the two diphthongs are sounded *av*- and *ev*- before sonants, *af*- and *ef*- before surd sounds.

In such words as καίω for καυ̯-ι̯ω, and παίω for παυ̯-ι̯ω, the υ after becoming consonantal disappeared. In Alexandria the υ was regarded as a spirant; so Δαβίδ, e.g. for Δαυίδ, would seem to show.

ου. The diphthong ου passed in the fourth century to the sound of *ū*. Older than this change is the alteration of ου to *ō*.

√πλυ	*πλουω passes to πλώω.
√*sru*	ῥέω but ῥώομαι.
√χυ	χέω but χώομαι.

υι. The combination υι stands apart from the diphthongs proper, as its components are both soft vowels or semivowels. In Homer it appears with diaeresis in συΐ, δρυΐ, but as a single sound in νέκυι, πληθυῖ, etc.

The same sound occurs in μυῖα and the fem. sing. of the part. perf. act. Before a consonant the combination was not allowed, as can be seen from the Homeric optatives, ἐκδῦμεν

(Π. 99) and *δαινῦτο* (Ω. 665); sometimes it was even disallowed before a vowel, as in *ἀναδύη* (ι. 377).

History of the diphthongs in Latin.

The Latin language, as we find it in classical times, is almost entirely devoid of diphthongs proper. The only one which survives is *au*, and even here we find a strong tendency to substitute a simple sound for the diphthong. In the time of Cicero for instance some branches of the Claudian gens called themselves *Clodii*, while others still retained the more archaic spelling of the name.

Ai.

The original diphthong *ai* is frequent in the oldest Latin inscriptions and survives even in those of the time of the Empire, both in the body of a word and also in the suffixes of cases. In the inscriptions on the tombs of the Scipios, e.g. (B.C. 250–150 circ.), we find *aidilis*, *aide* (*aedem*), *Gnaivod* (*Gnaeo*), *quairatis*; but side by side with the last form in the same inscription we find *aetate*. That this form *ai* however was originally dissyllabic is proved by its scansion in the older poets (e.g. *magnái rei públicai grátia*, Plaut. *Mil.* 103; a scansion which became a traditional archaism in poetry, e.g. *Aen.* 3. 354, 6. 747) and by the fact that the second component of the diphthong is represented sometimes in inscriptions by *ei* (e.g. *conquaeisivi*). The diphthong passed into the monophthong about B.C. 200–150, and was written *ae*; but the spelling *ai* long survived, especially in the legal style, though it cannot be supposed to represent in the ordinary language any difference in pronunciation.

In the few cases where *ai* occurs in classical Latin it represents not an original diphthong but the result of a contraction, e.g. *maior* from *mahi̯or*, *aio* from *ahio*. In originally unaccented syllables *ai* (*ae*) becomes *ī*, e.g. *incīdo* (*caedo*) (v. p. 79).

Au.

The diphthong *au* may either represent an original diphthong or be a secondary product. In this latter case it is the regular representative of an original *ou*, as for example:

ὄϝις	avilla.
ὀϝιωνός	avis, autumo.

Formed from adj.**autumus*(cf.*maritumus*) originally used of augury; cf. *ὀϝίομαι*.

λούω	lavo.
πτοέω	paveo.
οὖς	auris.
κοέω	caveo.
κόος	cavus.
θοός	faveo.

The alternation of *au* with *ō* may be a relic of the original *ou*, e.g. *lomentum*, *lotus*; *ospicor*, *oricilla*; *claudicat*, (*clodicat*, Cic. *de Or.* 2. 61); cf. *frustra* (*fraus*).

On the other hand Latin *au* is often developed from an original *ō*. Thus we find

cautes but cōs, cōtes; cf. cătus, Indo-European *kətós*.

plaudo beside plōdo. The compounds explodo, etc. show that the *ō* is original, as *au* in composition becomes *ū* (claudo, conclūdo).

ausculum, etc. beside ōs, osculum, Sk. *ās*; cf. aureae, auriga (also origa), ostium (also austium).

cauda, caudex beside cōda, cōdex.

aula beside olla.

Claudius, claudus, beside Clodius (*κλαδαρός* ?).

fauces but fōcale, suffocare.

Plautus but Plotius, semiplotia.

Haurio may be connected with *καταῦσαι*, *καθαῦσαι* (Hesych.), *ἐξαυστήρ* (Aesch. *Frag.* 355), but in composition we have *dehōrire*. Others suppose the stem to be *ghōs-*, Sk. *ghas*, seen in *hasta*; cf. '*latus hasta haurire.*' (Cf. *K. Z.* xxviii. 157. sq.)

But *fautus*, *cautus*, not **fotus*, **cotus*. That *au* was not the same in pronunciation as *ō* is proved by the story in Suet. *Vesp.* 22. Mestrius Florus a Consular having pronounced *plaustra* as *plostra* was greeted the next day by Vespasian as Flaurus[1].

Au is the most stable of the Latin diphthongs, but nevertheless began very early to pass into the sounds *ō* or *ū*. In one of the oldest inscriptions we have, we find the form *Pola* for *Paula*. We may compare the representation of *av* in Greek by *ao* (Meyer, *Gk. Gr.* § 118).

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[1] In the common language *au* was often corrupted to *o* without any philological justification, e.g. *ōrum* for *aurum*, where *au* is original (cf. *ἠϝώς*, Sk. *auṣas*).

In originally unaccented syllables *au* becomes *ū* in *excūso*, *concludo*; but *oe* in *oboedio.* For this diphthong in combination with other sounds cf. p. 189.

The diphthong *ei* seems to have been pronounced with a sound midway between *ē* and *ī*, and with one or other of these sounds it early became identified. Only in the earliest inscriptions is it to be taken as a true diphthong; elsewhere it is merely a graphic representation of *ē* or *ī*. Lucilius attempted to lay down rules for the use of *ei* and *ī*, but they were not observed (Ritschl *Op.* 4. 376), and practically even in the very earliest inscriptions we find *ī* and *ei* side by side. So great is the confusion between the three sounds *ei*, *i*, *ē*, or rather so near did they approach one another in pronunciation, that we find *ei* used to represent *ē*, *ī*, even in cases where there is no trace of an original diphthong (e.g. *decreivit*, *audeire*). The confusion even extends to the short vowels, so that we find *impeirium*, *heicce*; and in many instances we get the same form indifferently with *ē*, *ī*, *ei*, e.g. *heri*, *here*, *herei* (Ritschl *Op.* 2. 622). Ei.

In *meio*, *peior* the diphthong is the result of a contraction (*meihi̯o*, *peii̯or*).

The diphthong *eu* only appears in the single instance of *Leucesie* in the *Carmen Saliare.* Elsewhere, according to an invariable Latin law, it becomes *ou* and then later *ū*. Eu.

The rules for the change of an original *eu* in Latin are as follows:

1. *Eu* invariably becomes *ou*.

2. Before a vowel this *ou* remains unchanged: e.g. *novus*: νέος, *novem*: ἐννέα, *moveo*: ἀμεύω, *ovare*: εὐάζω, *Iov-is*: Ζεύς.

3. Before a consonant it becomes *ū*, e.g. Λεύκιος, Loucios (inscriptions) *Lūcius*: ζεύγεα, *jūgera*: ἀμεύω, *mutare*: *nundinae*, (*novem*, *noum̥*).

An *eu* in Latin, where not the result of contraction, represents an original *n̥ghu*; e.g. *levis*: ἐλαχύς, *brevis*: βραχύς (Indo-European *ln̥ghú-*, *brn̥ghú-*).

Neuter, *neutiquam*, *neu*, *ceu*, *seu* are only the result of an abbreviated pronunciation of *ne-ŭtiquam*, etc.

For the diphthong in unaccented syllables, etc. v. p. 187.

Oi. This diphthong existed in early Latin and survived to the beginning of the first century B.C. in the formal and archaic style, e.g. *oina*, *moincipieis* in the *Lex Thoria*. But just as *ai* became *ae*, so *oi* became *oe*, and this latter diphthong survived in the time of Cicero in the archaic style (e.g. *de Legg.* iii. §§ 6–11 we find *ploera*, *oenus*, *coerari*, *oesus*) and always in some words (*foedus*, *poena*, *Poeni*, *Coelius*); *oe* pronounced as a modified German *ö*, then sunk in most words to *ū*, but we find *moenia* and *munia*, *poenire* and *punire* side by side, and always *poena*, *Poenus*; cf. *oboedire*. The change may be paralleled by the change οι, οε, υ, of the Boeotian dialect (Meyer, *Gk. Gr.* § 114).

In some few words (e.g. *fidus*, *vicus*, *vinum*) an original *oi* may have become *ī* by an alteration of *oi* to *ei*, but of these *vicus*, *vinum* may be borrowed.

The diphthong *oe* results from a contraction in *coepi* (*co-epi*), *coetus* (*co-itus*).

Ou. The diphthong *ou* in Latin never represents an original *ou*, that is an *ou* existing before the separate existence of the Latin language. That diphthong, if ever existing at all in Latin, is represented by *ū*.

Boues for example is perhaps borrowed from the Italian dialects; as we shall see elsewhere, the initial consonant in pure Latin can only be *v* representing Indo-European *g* initial before a vowel.

Ovis is similarly borrowed; the true Latin form is **avis*[1], which survives in *avilla*, *avena* (sheep-grass).

This *ou* representing an original *eu* when accented is kept before vowels, in which case the second element of the diphthong becomes consonantal, but in unaccented syllables it sinks to *ŭ*; so *nóvus* beside *dénuo*, *monui* (=*monĕ-u̯i*).

The old forms *sovo*, *soveis* of the inscriptions by the side of *suus*, *tuus* may be explained by supposing the original existence of two parallel stems, so that ἑός (*seu̯os*) corresponds to *sovos*, ὅς (σϝος) to *suus*.

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[1] *Ovis* instead of *avis* may possibly be due to an assimilation to *bovis*. *Avilla*, *avena* may come from the stem *ag*- in *agnus*.

Before consonants this *ou* becomes *ū* or *ō*, the latter being apparently a latter formation; e.g. the regular participle of *moueo* is **mūtus*, which appears in *mutare*; *mōtus* is a later formation with the vocalisation of the finite verb. So we have *bōbus* and *būbus*, *ōpilio* and *ūpilio*, *rōbigo* and *rūbigo* (ἔ-ρευθ-ος).

Tabulating our results we find:

Latin *ĕu* = original *n̥ghu*.
ău (*ō*) = original *au̯*, *ou̯*.
ŏu(*ū*) = original *eu̯*.

The Semivowels.

The semivowels of the Indo-European alphabet are *i̯*, *u̯*, *r*, *l*, *m*, *n*.

The characteristic of a semivowel is that under certain circumstances it plays the part of a vowel, i.e. it is capable of forming a syllable by itself either with or without accompanying consonants, while in other cases it is a consonant, that is, it possesses no proper sound of its own but combines with a vowel proper to form a syllable.

For example in the word πείθω the ι is consonantal. It has no proper and independent sound of its own but acts only, to adopt De Saussure's term, as 'a sonantic coefficient' of the proper vowel ε. (Cf. De Sauss. p. 8.)

Expulsion of ε.

But in the thematic aorist, e.g. ἔ-πιθ-ο-ν, which, as we have seen (p. 57), in the case of roots containing ε in the present stem, is regularly formed by the expulsion of the ε, the ι appears no longer accompanied by another vowel but stands by itself between two consonants. *Ipso facto* it ceases to be a mere coefficient glide-sound to ε, but becomes fully and independently vocal.

What happens in the stems πειθ-, πιθ-, with the semivowel *i̯*, happens also in the stems φευγ-, φυγ- (of φεύγω, ἔφυγον), with the semivowel *u̯*.

With regard to these semivowels *i̯*, *u̯*, we may say generally that when appearing between two consonants they are autophthongous or fully vocal: when following a vowel they are symphthongous or merge with the preceding vowel into one sound called a diphthong; when coming between a consonant and a vowel they are fully consonantal[1].

I and *u* consonantal are in this book written *i̯*, *u̯*.

Liquids and Nasals. Now *r*, *l*, *m* and *n* stand exactly on the same footing as *i̯* and *u̯*. What happens in the one case, happens also in the other. It has been pointed out (p. 57), that as from πείθω we get a strong or thematic aorist ἔπιθον, and from πέλομαι a thematic aorist ἐ-πλ-όμην, both alike characterised by the loss of ε in the stem, so from δέρκ-ομαι, κλέπ-τω, *πενθ-ω (cf. πένθ-ος and πείσομαι for πενθ-σομαι) we ought to get by expulsion of the ε the thematic aorists *ἐ-πνθ-ον, *ἐ-κλπ-ον, *ἐ-δρκ-ον. Now this last form we do actually find in Sanskrit. We have there a form *ádr̥çam*, corresponding exactly to ἔδρκον, and we know that the liquids *r*, *l* in Sanskrit have under certain circumstances the value of vowels; that is, they form a syllable by themselves without the addition of any written vowel. From the stem *darh*, e. g. we get *á-da-dr̥h-a-nta*, from the stem *par* we get *pi-pr̥-más*, etc., where *r̥* represents the liquid with the value of a vowel, and where the liquid is no longer a consonant, but is fully and independently sonant.

Liquid Sonants. Brugmann and his followers have sufficiently justified the hypothesis that this liquid sonant is not a special development of Sanskrit, but existed as such in the original Indo-European language, and that traces of it are found in all branches of the Indo-European family. But while in Sanskrit the vowel-sound of the liquid is never written, in the other languages it is written. This liquid sonant, the sound of which would seem to have been indefinite, found no peculiar equivalent in the alphabets of the different nations: each represented it by that vowel, or combination of vowels, which it seemed to them most to resemble. When, therefore, we find in Greek καρδί-α, in Latin *cordi-s*, in Gothic *hairto*, we must not conclude that a Greek α answers to a Latin *o* and Gothic *ai*, but, looking to the Sanskrit *hṛdí*, we must suppose that the variation of vowels in the three languages is due to the fact that the vowel-sound of the liquid sonant, not finding its exact equivalent in any alphabet, was differently represented in each.

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[1] In such cases as νηΐ, ἀῡτμή, etc. the semivowels do not really immediately follow the vowel, an intermediate sound having dropped out, e. g. νηϝί.

The liquid sonants (*l̥*, *r̥*) are thus represented in the different languages with which we are concerned:

r̥ = Sk. *ṛ*	Gk. *αρ, ρα*	Lat. or.
l̥ = Sk. *ṛ*	Gk. *αλ, αλ*	Lat. ol, ul.

But it cannot be supposed that eventually, at any rate, the Greek *αλ*, e. g., as the graphical representation of a sonant, differed in pronunciation any more than in writing from *αλ* representing an original *al*.

In those cases where we have only one language to go by, it is often impossible to be certain whether that combination of letters which may represent a liquid sonant does actually stand for it in any given case, and not rather for an original vowel plus an original consonant. Where, however, the same stem in a corresponding formation or inflexion is found in a kindred language, the agreement or non-agreement of the vowel is a sure test. The Greek *ἄλλος*, e.g. (for *ἀλι̯ος*) compared with the Latin *alius*, shows by the agreement of the vowels that both correspond to an original *ali̯os*: the Greek *καρδία*, as compared with the Latin *cordi-s*, shows by the disagreement of the vowels that both correspond to an original *kr̥di-*.

Nasal Sonants.

The existence of nasal sonants is more hypothetical. Liquid sonants exist as such in Sanskrit: nasal sonants have left slight trace of their nasal character even in that language. But a comparison of the following words out of many that might be given leaves little doubt on the subject:

τατός	Sk. *tatá*	Lat. -tentus.
βατός	*gatá*	-ventus.
(αὐτό)ματος	*matá*	(com)mentus.
ὄ-νομα	*nā́ma*	nomen.
ἑπτά	*saptá*	septem, etc.

Evidently that which happened in the case of the liquid sonants has happened here: only that in Sanskrit and Greek the nasal has disappeared, leaving no trace of itself whatever, and being represented solely by the vowel-sound with which it was accompanied. *τατός*, *tatá*, *-tentus* must all go back to an original *tn̥tó*, where *n̥* represents the nasal sonant. In these cases, therefore, there is no trace whatever left of the nasal in Greek and Sanskrit, but it is simply represented by its accompanying vowel-sound. In Latin, on the other hand, both the consonantal and the vowel-sound of the sonant are represented in writing, and the result *en* is not distinguishable, except by inference from connected words, from an original vowel plus an original consonant.

The representatives of the nasal sonants (*n̥*, *m̥*) in the Sanskrit, Greek, and Latin are as follows:

n̥ = Sk. *a* Gk. *α*, *αν* Lat. *en*.
m̥ = Sk. *a* Gk. *α*, *αμ* Lat. *em*.

The special treatment of the sonants in various combinations will be more properly considered under the respective letters.

It may be noticed that the liquid and nasal sonants have their representatives in modern languages.

When we say '*My father is old*,' '*My ankle is hurt*,' '*Paddington Station*,' '*Give them a book*,' the words '*father*, '*ankle*,' are dissyllabic, '*Paddington*' is trisyllabic, '*them*' forms a syllable. But in no case is any definite vowel heard in the final syllable: the syllables are formed by the trilling of the liquids, and the grunting of the nasals. The sounds might more properly be represented by *fathr̥*, *ankl̥*, *Paddingtn̥*, *thm̥*.

So in French, e.g. *théâtre* is trisyllabic, but the last syllable is only the liquid sonant, and the same may be said of words like *edel* in German.

The Semi-vowels as Sonants. As will be seen in dealing with the question of Ablaut (p. 223), the quantity of *i* or *u* in any syllable depends upon the accent of the word in which they occur. It would have been possible to group *i* and *u* as sonants along with the hard vowels *a*, *e*, *o*, but in consideration of the twofold nature of their functions we have preferred to deal with them separately.

Indo-European ĭ.

Indo-European ĭ = Greek ῐ, Latin ĭ:

δίκη	in-dic-are.
ἔ-πιθ-ον	fid-es.
ϝιδ-εῖν, ϝίδ-ρις, ϝίσ-τωρ	vid-eo.
ἔ-ϝικ-τον	vic-em.
ἠ-ϝίθεϝος	vidu-us.
μινύθειν	minuere.
-ικός	-icus.
ἀμφί	ambi-.
στικ-τός	in-stig-are.
κίειν	ci-ere.
ἔ-λιπ-ον	re-lic-tus.
-ιος	-ius.
ἰμαλιά (measure of meal, Hesych.)	simila, similago.
ϝίον	viola.
ἴν (*αὐτήν·* Κύπριοι Hesych.)	i-s.

With *ἴν* the Cyprian for *αὐτήν* and *αὐτόν* we may compare the demonstrative *-ι* of *οὑτωσ-ί*, or else it answers to *σϝίν*.

προσ-ιτός	red-itus.

In *ἴχνος* the guttural has, as often, been aspirated before the nasal. *ἴχνος* possibly answers to *imago* for *ihmago**.

Indo-European i.

Indo-European ī = Greek ῑ, Latin ī:

ϝίς	vis.
εἶμεν (*ἐσ-ῑμεν*)	s-imus.
ϝρῑγος or *σρῑγος*	frigus.
θλίβω	af-flīg-ere.
θιγγάνω(√*dhīg* with present stem nasalised)	figo.
ϝιός (for *ϝῑσος* cf. *ϝῑσο-ϝεντ-ς, ἰόεις*	vīrus, virosus (viroṷentus).
ϝῑτέα	vitex, vitis, viere, vimen.
ἰθαρός	Idus (properly 'the full moon').

Hesychius gives *ἰθαραῖς*, which has a number of senses; in the sense of *καθαρός* the word comes in the *Anthology* xv. 22 *κρανᾶν ἰθαρᾶν*. Hesychius also gives *ἴθαρ· εὐθέως*, which, according to Cobet, is for Homeric *εἶθαρ*.

κλίνω, κλιτύs	clivus, inclino, Clitumnus.
κνῖσα	nīdor.
πίων, πτύω (= *πι̯υι̯ω.*)	pituita.
κρῖμα	crimen.
ἰξός	viscus.

Indo-European ŭ.

Indo-European *ŭ* = Greek ῠ, Latin *ŭ* :

ζυγόν	jugum.
φυγή	fuga.
μυῖα (for *μυσ-ι̯α*)	musca.
πυθμήν (for *φυθμην*)	fundus (for fud-nus).

The initial aspirate of *φυθμην* changed according to Grassmann's law of dissimilation (cf. p. 174).

τύμβος	tŭmere.
ὑπό	sub.
ὑπέρ	super.

As the Sk. *upa, upari* show no initial spirant, the Greek and Latin forms are probably for *ἐξ-υπό, ἐξ-υπέρ*, with the *ε* of the first compound lost before the accented syllable.

δύω, δύο	duo.
λύχνος	luc-erna.
ἐ-ρυθρ-ός	ruber
κλύειν	cluere.
κλυτός	inclutus.

Indo-European ū.

Indo-European *ū* = Greek ῡ, Latin *ū*:

γλύφω	glubo.
θυμός	fumus.
πῦρ	purus.
μῦς	mus.
νῦν	nun-c.
σκῦτος	scutum.
ὗs, σῦs	sus.

The retention of the initial *σ* in Greek may be due to assimilation.

Στρυμών	Rumo.

This is the old name of the Tiber; the root is *√sreu*; cf. Eng. *stream*.

ζύμη	jus.
μύω	mutus.
πύθω	puteo.
βου-λῡ-τός.	so-lū-tus.

Semi-vowels as Consonants.

Indo-European *i̯*, at the beginning of a word, appears in Greek as the rough breathing, in Latin as *j*:

ὅς	Sk. *yás.*	
ὑμεῖς, ὔμμες	Sk. *yuṣma.*	
ὑσμίνη	Sk. *yudh-.*	
ἧπαρ	Sk. *yákṛt*	Lat. jecur.

Initial aspiration in Greek is frequently irregular (cf. p. 173).

This semi-consonantal *i̯* must be distinguished from the spirant *j*, which appears initially in Greek as ζ, though in Sanskrit, Latin and English, original *j* is represented by the same letter as *i̯*, e. g.

Sk. *yugám*	ζυγόν	jugum	*yoke.*
	ὥρα		*year.*
yákṛt	ἧπαρ	jecur.	

Answering to Sk. √*yaj* (offer) we have in Greek ἅγ-ιος; answering to Sk. √*yas* (be heated) we have Greek ζέω.

In Greek Ζεύς the Z originated in an original *di̯-*, cf. Sanskrit *dyāús*, Latin *Iov-is*, *Dies-piter.*

Indo-European *i̯* between two vowels fell out in Greek after all vowels except υ, e. g.:

δϝει̯ος = δέος.
δεδϝοι̯α = δείδω (cf. p. 20).
τιμαι̯ω = τιμάω.
φιλει̯ω = φιλέω.
δηλοι̯ω = δηλόω.

κείαται should pass to κέαται, but on the analogy of κεῖμαι the form κείαται is kept as well as the correct form. This word really represents κει̯n̥ται.

Consonantal ι̯ appears instead of ι in certain words where the diphthong in the interior of a word appears metrically as short, e. g.:

N. 275. *οὐδ' ἀρετὴν οἷός ἐσσι* (*οἷος* = *ὁ-ι̯ος*).
Σ. 105. *τοῖος ἐὼν οἷος οὔτις* Ἀχαιῶν *χαλκοχιτώνων.*
Π. 235. *ἀνιπτόποδες χαμαιεῦναι* (=*χαμα-ι̯ευναι*).
υ. 379. *ἔμπᾰιον* (= *ἐμπα-ι̯ον*).

The ι̯, instead of forming a diphthong with the preceding vowel, plays the part of initial consonant to the succeeding syllable.

This consonantal ι̯ also appears in the so-called shortening of a diphthong in hiatus, e. g. *ἄνδρα μοι ἔννεπε* (= *ἄνδρα μο-ι̯ ἔννεπε*), δ. 429 Αἰγυπτι̯ῃ, B. 537 Ἱστι̯αῖαν, B. 811 *ἔστι δέ τις προπάροιθε πόλι̯ος αἰπεῖα κολώνη*, B. 415 *δηι̯οιο.*

ι̯. ι̯ becomes ῑ, *-ῑων* of comparatives = *-ιι̯ων*, Sanskrit *-īyams.* And in presents like *ἰδίω* (Hom. *ἴδῑον υ.* 204), *κονίω, μηνίω* (B. 769), *κηκίω* (Soph. *Phil.* 697) *πολὺς δ' ἀνεκήκῑεν ἱδρώς* (N. 705) the *-ῑω* stands for *-ιι̯ω.*

Such explanations, however, both of the shortening of diphthongs and the alternation of ῑ and ῐ are to be regarded as hypothetical.

Consonantal u̯ in Greek. The consonantal *u̯* is not to be distinguished in Greek from the digamma, the spirant sound corresponding to the Latin *v*, English *w*. There is nothing like the criterion given in the case of consonantal *i̯* by the distinction between initial ζ (= spirant *j*) and the rough breathing (= ι̯) in Greek. *U̯* will, therefore, be better treated under the head of the spirants; but we give a few instances below where it appears as *υ*:—

ταλαύρινος for *ταλα-Fρινος.*
αὐίαχος for *ἀ-FιFαχος* : cf. *Fι-Fάχ-η.*
αὐέρυσαν for *ἀ-Fερ-υσαν.*
√*vel.* *εὔληρα* for *ἐ-Fληρα*, Lat. *lora*, Hesych. *αὔληρον.*
εὐρύς for *ἐ-Fρύς*, Sk. *varīyas.*
ἀπαυράω = *ἀπ-α-Fράω.*
so *ἀπούρας* = *ἀπο-Fρας*: cf. *ἀπό-ερσε* (*verrere*).
√ *veg.* { *αὐξάνω*, for *ἀ-Fξάνω* : cf. *ἀ-Fέξω*, Lat. *veg-eo.*
√ *ug.* { *αὐγή*, for *ἀ-Fγή*: cf. *ὑγιής* = Sk. *ugrá.*

Forms like *κοῦρος* for *κορFος* will be explained later (p. 185).

i̯ and u̯ in Latin.

In Latin the semivowels i̯ and u̯ between vowels either appear as consonants or else disappear altogether.

Consonantal u̯, after an originally unaccented vowel, appears as *v*, as, for instance,

navis	beside Greek	*νηός.*
clavis	„	*κληίς.*
scaevus	„	*σκαιϜός.*
laevus	„	*λαιϜός.*
aevum	„	*αἰϜών.*
(bovis	„	*βοϜός).*
gravis	„	*βαρύς.*

After accented vowels i̯ and u̯ disappear,

bóere but *bováre* corresponding to *βοϝᾶν.*

So *ama-i̯-o* becomes *amo,* as *τιμαι̯ω, τιμῶ.*

mone-i̯-o becomes *moneo,* as *φιλέω, φιλῶ.*

audi-i̯-o becomes *audio,* like *κηκίω, ι̯δίω.*

congrū-i̯-o becomes *congruo,* as *βρυι̯ω, βρύω.*

After the loss of the semi-consonantal i̯, the final vowel of the stem is shortened before the following vowel, but the original quantity appears, for instance, in *fū-vi-mus* (Ennius in Cic. *de Orat.* 3. 42. § 168). Compare the length of *υ* in *φῡ́ομεν* (Ar. *Av.* 106). Similar cases are *ple-i̯-oses,* which becomes *pleores* (in S. C. *de Bacch.*), *plures*; cf. *πλε-ι̯-ων.* So *aure-i̯-us* becomes *aureus*; cf. *χρύσε-ι-ος, χρύσεος.* *e-i-o* becomes *eo*; cf. *εἶμι.*

So an original *dhu-i̯-o* gives *suffio,* Greek *θύω, θυι̯ω,* and *bhu-i̯-o* gives *fio,* Greek *φύω* Aeol. *φυίω* and *φῑτύω.*

Before unaccented vowels i̯, u̯ are consonantal, even in classical times in poetry. *genu̯a* (–◡), *abi̯ete* (–◡◡), *tenu̯ia* (–◡◡), and so too *mīluus* or *milvus* indifferently.

After consonants *u̯i, u̯o* become *vi, vo,* as *selu̯o* becomes *solvo, velu̯o* becomes *volvo, suadu̯is* becomes *suadvis, suavis.*

The combinations *au, ou, eu* have been treated under the diphthongs, while those of *u̯e* with consonants will be treated under Consonantal Combinations.

The liquid sonants in Greek.

The origin and nature of liquid sonants have been sufficiently explained (p. 57). We need only repeat the law, that the liquids appear as consonants before vowels, as sonants before consonants. As consonants they will be treated later on; as sonants they appear in the following instances. r̥ = Gk. *αρ*, *ρα*. l̥ = Gk. *αλ*, *λα*. We can classify them either, as below, according to the different formations in which they occur, or according to the particular sounds before which they appear, e. g.:

(1) Before consonantal sounds, and at the end of a word, e. g. in *τέτρα-τος*, *πατρά-σι*, *ἧπαρ*.

(2) Before ι̯ as in *σπαίρω* (for *σπαρ-ι̯ω*), *σκάλλω* (for *σκαλι̯ω*).

(3) As transitional sounds before sonants with a following *r* or *l*, e. g. *βαρ-ύς* (*βρ̥ρ-*), *τάλ-ᾱς* (*τλ̥λ-*).

In thematic aorists.

Liquid sonants, classified according to the formation in which they occur, appear in simple thematic aorists from present stems containing *ρ* or *λ*, e. g. pres. stem *δερκ*, thematic aor. *ἔδρακον* (*ἔδρ̥κον*). The same sonant appears in the Homeric adverb *ὑπόδρα* for *ὑποδρ̥κ*, the Sanskrit *-dṛc-*. *κ* in Greek disappears at the end of a word (except in *ἐκ*, *οὐκ*), and we have *ὑπόδρα* left.

περθ-	*ἔπραθον* (*ἐπρ̥θον*) *ἐπράθετο* *διαπραθέειν*	Homeric forms.
περδ-	*ἔπαρδον* (*ἐπρ̥δον*). *ἀποπαρδών*, *παρδήσομαι*.	
τερπ-	*ταρπώμεθα* (*τρ̥π-*).	
τρεφ-	*ἔτραφον* (*ἐτρ̥φον*).	

According to Veitch, the form is exceedingly rare, if not doubtful. The best MSS. give *ἔτραφε* (Ψ. 90) and *ἔτραφε δ' ἐνδυκέως καὶ σὸν θεράποντ' ὀνόμηνεν* (Φ. 279). So also in B. 661 *Τληπόλεμος δ' ἐπεὶ οὖν τράφ' ἐνὶ μεγάρῳ εὐπήκτῳ*, but in inferior authorities we find *τράφη ἐν*, while in T. 201 we find *ὃς τράφη ἐν δήμῳ 'Ιθάκης*, which is universally accepted; cf. also Λ. 222. The strong aor. pass. *ἐτράφην* (*ἐτρ̥φην*) is common.

πείρ-ω (*περ-ι̯ω*)	*ἀνα-παρ-είς* Hdt. 9. 94. *δια-παρῇ* Lucian *Pisc.* 51.
στέλλω	*ἐστάλην*.

The very rare form *ἐστάλθην* (*C. I. G.* 3053) is a case of false analogy.

κείρω (*κερ-ι̯ω*)	*καρῇ* Hdt. 4. 127, etc.
βρεχ-	*ἐβρᾰ́χην* Anacreont. 31. 26.

φθερ-, φθείρω (for φθερι̯ω)	ἐφθάρην (ἐφθρ̥ην).

Here the liquid has become sonant, though not followed by a consonant: strictly we should have had ἐφθρην, but ἐφθάρην is due to the analogy of ἔφθαρμαι (ἐφθρ̥μαι) and the fact that in all other forms of the verb a vowel appears before the ρ.

ἔκραγον, ἔδραμον, ἔπταρον, ἔβαλον have no corresponding present stem in ε. The true present of βάλλω, as we shall see later on, appears in the ἐσδέλλειν of the Arcadian dialect. But the existence of stems in δρεμ-, πτερ- is vouched for by the forms δρόμος, πτόρος, where we see the ο which regularly alternates with ε in the same root.

For ἔπταρον the present πτάρνυμι is only very late, while the form πτάρω, which is given in Aristotle *Probl.* 33. 1. 3, etc., should rather be πταίρω, as Dindorf indeed is inclined to read. Upon the analogy of φθείρω we are justified in reconstructing πτάρω or πταίρω as πτείρω (for πτερι̯ω), when we should have the regular series πτερ-ι̯ω, πτόρος, ἔπταρον.

Of reduplicated aorists we have τετάρπετο, which admits of the same explanation as ταρπώμεθα.

The perfect pass., like the thematic aorist, is regularly formed by the expulsion of the ε. **In the Perfect Passive.**

σπερ- in σπείρω for σπερ-ι̯ω	ἔ-σπαρ-ται.
δερ-	δε-δαρ-μένος.
φθερ- in φθείρω	ἔ-φθαρ-μαι.
μερ- in μείρομαι for μερ-ι̯ομαι	εἵμαρται (εἵμρ̥ται).

The root of μείρομαι is σμερ-, and εἵμαρται is for σεσμρ̥ται. Hesychius has a gloss ἔμβραται· εἵμαρται, and this form shows a metathesis of the liquid and the insertion of a euphonic β, as in ἤμ-β-ροτον, μεσημ-β-ρία, etc. The late forms μέμαρται and μεμόρηται (Ap. Rh. 1. 646) are on the analogy of the perfects with syllabic reduplication, when the original spirant of the root had been forgotten; μεμόρηται, μεμορημένος owe their ο to the example of ἔμμορα.

κερ- in κείρω	κέκαρμαι.
στελ- in στέλλω for στελι̯ω	ἔσταλμαι.
στρεφ-	ἔστραμμαι.
τρεφ-	τέθραμμαι.

The real root of this word is θρεφ-, which has become τρεφ- in the present stem according to Grassmann's law (p. 174); the initial aspirate reappears where the second aspirate does not occur.

The present indic. of verbs in -μι is regularly formed with **In Present stems.**

a long vowel in the singular, and a short vowel in the dual and plural, e.g.

τίθημι, τίθεμεν.
δίδωμι, δίδομεν.

Similarly from an assumed *πιμπελμι, Sanskrit *píparmi*, we get a 1st pers. pl. πίμπλαμεν (πιμ-πλ̥-μεν) corresponding to the Sanskrit *pipṛmás*.

The Greek present actually in use is πίμπλημι, and the η is not only Ionic but Doric. Thus in the fragments of Epicharmus and Sophron we have πίμπλη, ἐνέπλησαν, πλήρης. It is true that Hesychius gives πλάθους· πλήθους, and that πλάθουσι is read in a corrupt chorus of the *Choephoroe*, 585, but these must be regarded as bad Attic imitations of Doric (cf. Ahrens ii. 132, De Sauss. p. 13). The form πίμπλημι is by metathesis for πιμπελμι. The loss of the ε vowel in those stems which show a short vowel in their full form, corresponds to the shortening of the long vowel in δίδωμι, δίδομεν.

πίμπρημι for πιμπερμι, like πίμπλημι, pl. πίμπρᾰμεν.

This verb is post-Homeric, and in Homer we have πρήθω.

φερ- πιφράναι.

The word is only found in the compound ἐσ-πιφράναι Aristot. *Hist. Anim.* 5. p. 541 b, 11, but in Attic we have ἔκ-φρε-ς, ἐπ-εισ-φρῶ, which justify the assumption of a root φερ- answering to the Sk. *bi-bhar-mi* (cf. Curt. *Verb.* 160, Veitch, p. 611, De Sauss. p. 13).

In Verbals in -τός. These verbals, when connected with pres. stems in *e*, show the same loss of *e* that we have already noticed in other formations. In those roots which contain a liquid, the liquid consequently becomes sonant :

δέρ-ω { δρατός (Ψ. 169).
δαρτός is late.
κείρω (= κερ-ι̯ω) καρ-τός.
φθείρω (= φθερ-ι̯ω) φθαρ-τός.
φέρ-ω, verbal φερ-τός, Sanskrit *bhṛtá*—φερτός should regularly be φαρτός: ἐγερτός is another exception.

The reduplicated verb ἰάλλω has a verbal ἰαλτός Aesch. *Choeph.* 22, where the reduplication is kept contrary to rule.

σπείρω (= σπερ-ι̯ω) σπαρτός (Soph. *O. C.* 1534).

From this root is formed, with change of accent, σπάρτον (cf. σπεῖρα).

In secondary present stems. The only presents showing a liquid sonant are those formed with the addition of a suffix to the pure verbal stem. We shall see later that the expulsion of the ε-sound is inseparably connected with the phenomena of accentuation. Where the accent originally fell on the stem the vowel was kept: where it fell on the suffix the vowel disappeared. Present stems like *τρέφ-ω*, which are formed without a suffix, took the accent on the stem in the present tense, and consequently the vowel was maintained throughout. Stems, on the other hand, formed with the suffix -*ι̯ο*, -*ι̯ε* often appear with the weak root, and it would, therefore, seem that the accent must have fallen on the suffix. But it is to be noticed that forms with the full root are not less common (e.g. *σπείρω* for *σπερι̯ω* beside *σπαίρω* for *σπαρ-ι̯ω*), and in Sanskrit the '*ya*-class' (the 4th class of the Hindu Grammarians) regularly takes the accent on the stem. As far as Greek is concerned, we cannot say that the one class is older than the other.

The following show the reduced form of the root in the present stem (Meyer, *Gk. Gr.* p. 11).

ἀσπαίρω for *ἀσπρ̥ι̯ο*.

σκαίρω, cf. *σκιρτάω* and *σκεῤῥὸν ὄντα· σκιρτῶντα* Hesych.

χαίρω, cf. *grātus* (*ghr̥̄to-*), but, on the other hand, *χαρά*, *χάρις*.

γαργαίρω and *φθαίρω* (Doric) uncertain (Ahrens 2. 186).

βάλλω for *βλ̥ι̯ω*.

The simple pres. comes in Arc. *ἐσδέλλω*: cf. *βέλος*.

πάλλω for *πλ̥ι̯ω*, compare *πέλας*, and Latin *pello*.

ἰάλλω for *σι-σλ̥-ι̯ω*, Sanskrit *sísarti*.

ἄλλομαι may be for *σλ̥ι̯ομαι*, but the vowel of Lat. *salio* is against this: the sonant *l̥* would in Latin have been represented by **sulio*.

δαιδάλλω is a denominative from *δαίδαλος*.

σφάλλω, cf. *ἔσφηλα*.

δάλλει· κακουργεῖ Hesych.; cf. *doleo*, but also *delere*, *δηλήμων*.

ἐχθαίρω for *ἐχθρ̥ι̯ω*, cf. *ἐχθρός*.

We have already spoken of the reduction of the root upon the addition of suffix -*to* in the formation of verbal nouns. **In Nominal Formations.**

The suffix -*τι* goes along with expulsion of the radical *e*, and consequent reduction of the root:

bhar- Sk. *bhr̥tí*.

κερ- *κάρσις* late.

The original *τ* passes to *σ* before *ι* according to the Greek rule.

ἀγαρρίς· ἄθροισις Hesych.

ἀγαρρίς has been assimilated from *ἄγαρσις* for *ἀγαρ-τι-ς*. The full form of the root is found in *ἀγείρω* for *ἀγερ-ι̯ω*. The accent of *ἀγαρρίς* is contrary to the rule of the formation and may be a later corruption.

στελ- *στάλσις* late.
δερ- *δάρσις* late.

Exceptions to the above rule are to be found in the full root of such nouns in -*σις* (suffix -*τι*), as *λεῖψις*, *ῥῆσις*, *ἄμπωτις*, *μῆτις*, but these are confined to Greek.

The suffix -*ú* is accompanied by a reduction of the root

√*merd* *βραδύ-ς* Sk. *mṛdú*.

The *β* of the Greek is euphonic, as in *βλώσκω* beside *ἔμολον*. Hesychius gives *ἀβλαδέως· ἡδέως*, which admits of a connection with Lat. *mollis*, which according to old etymology was for *moldu̯is*.

πλατύς Sk. *pṛthú*.

Unless *πλέθρον* is related to this root, there is no corresponding form in *e*.

θρασύς, *θαρ-συ-*(*θαρσύνω*), Sanskrit √*dhṛ*; cf. *Θερ-σίτης*.
κρατύς, *κάρτα*, but comparat. *κρέσσων*.

I.-E. *g*^{u}*r̥*-, *βαρύς*, Sk. *gurú*, Lat. *gravis*.

λύκος for *ϝλακος*, Sk. *vṛk-a*.

In this word the change of the vowel in Greek is due to the influence of the spirant sound *ϝ*.

When roots containing *e* with a subsidiary semivowel are used as nominative themes without a formative suffix, they expel *e* and reduce the root, as in the Homeric adverb,

δερκ *ὑπό-δρα(κ)*.
καρδ-ία, *κραδ-ίη*.

Lat. *cord*- shows a reduced root beside the full form in *κῆρ*.

ἄρκτος Sk. *ṛkṣa* Lat. *ursus* (= *orc-sus*).
λαυκανίη (X. 325), cf. Sk. *sṛkvam* (corner of the mouth).

λαυκανίη perhaps for *σλακϝανίη* with *υ* epenthesis as in *ταῦρος* (cf. p. 198).

πράσον (*πr̥*) Lat. *porrum*.

In nouns of relationship and *nomina agentis* in -*ter*-, we have the reduced stem in the weak cases (cf. p. 299.)

πα-τρ-ί	Sk. *pi-tr-é*	Lat. *pa-tr-i.*
πα-τρά-σι	*pi-tṛ́-ṣu.*	

And in the same way with *μη-τρά-σι, ἀνδρά-σι, θυγατρά-σι.*

In composition we have the reduced form in *ἀνδρά-ποδον*, but this stands by itself.

In certain neuter words we find a suffix *r̥* or *r̥t*, e. g. Sanskrit *yákṛt*, Greek *ἧπαρ*, Latin *jecur.*

An exception is to be found in *οὖθαρ*, for in Sanskrit we have *ū́dhar*, which shows that the *αρ* does not stand for a liquid sonant, but for original *-ar.*

Liquid sonants in Latin.

We have seen that the liquid sonants in Latin are ordinarily represented by *ol*, *or*; but in the case of *ol* the indeterminate vowel preceding the liquid in the majority of cases became *ul*, *u* being the vowel which, if there be no preventing cause, appears before *l* (p. 71).

From the fact that the Latin vowel-system is less complete than that of the Greek, and that the various forms from the same stem were far more regularly reduced to one pattern, the sonants in Latin are at once rarer and more difficult to identify. The following instances, however, seem pretty certain[1]:—

pello	pulsus (*pl̥tó-*).
vello	vulsus.
per-cello	per-culsus; cf. procul (*procl̥.*) for *procl̥st*, Sk. *pra-kṛṣ-ta* (distant).
sepelio	sepultus.
mel-	mulsus (mixed with honey).
per- *πέρ-ας*	porta (*pr̥tá*).
κείρω	curtus (*kr̥tó*), corresponding to Gk. *καρτός.*
σπείρω	sportula, from a past part. *spr̥tós* = Gk. *σπάρτον.*

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[1] In the case of those words containing *l*, it is impossible to say whether the alternation of *e* and *u* is due to the liquid sonant or to the merely phonetic change by which *el* becomes *ol* (*ul*) in Latin everywhere except before *i* or a second *l* (p. 189).

All these are past participles (or formations from the past part. stem), taking accent originally on the last.

Morsus would seem to be for *mr̥dtús*: the pres. should be **merdo* (appearing in Gk. *σμερδ-νός*, Germ. *Schmerz*, Eng. *smart*): *mordeo* is a derived present = (*s*)*mr̥dei̯o*, originally accented after the stem; or *mordeo* may show the same Ablaut as in φορέω beside φέρω.

There is the same difficulty about *torreo*, *horreo*. The forms in *e* are seen in *terra* (= *tersa*), τέρσομαι, and χερσός: *tostus* for **torstus* (*tr̥stó-*) probably shows the liquid sonant, but whether the presents are new formations or show the original Ablaut *o* is doubtful.

Other miscellaneous forms are—

cordí- (*kr̥di-*) Gk. κραδία, Sk. *hṛdí*.

porrum for **porsum*, Gk. πράσον, I.-E. *pr̥só-*.

ursus for **orcsus*, Gk. ἄρκτος, Sk. *ṛkṣa*. The original form will be *r̥ksó-*.

fortis is connected with *fero*, the termination *-tí* originally taking the accent.

sortis, connected with the root *ser-*, which appears in *ex-sero*, *prae-sert-im*, Gk. ἰάλλω = σι-σl̥-i̯ω.

jecur, Gk. ἧπαρ, Sk. *yákṛt*.

The declension of this word will be discussed later here; it will be enough to observe that the *r* only appears in the nominative: the oblique cases are formed from a stem *jekn-*, Latin *jecinis*. The form *jecinoris* is the result of a confusion of the two stems.

mollis for *ml̥du̯is-*, Gk. μαλθ-ακός (μl̥θ-ακός).

For connection with βραδύς (for μr̥δύ-ς), which better explains the *a* which we must suppose in the primitive form, cf. p. 102.

gravis for **grovis*.

We have already seen that a Latin *av* represents an original *ov*. But this **grovis* is itself the result of a metathesis and is for **gorvis*. The metathesis of the liquid explains the retention of the velar guttural as *g*: if it had originally appeared before a vowel, it must have become *v* in Latin (v. p. 187). The original form then will be *g̥r̥u̯í*, and we can compare the Greek βαρύς (v. Havet, *Mém. Soc. Ling.* 6. p. 18).

dormio is for *dr̥mi̯o*. We can compare δαρθάνω (δr̥-θ-n̥n-ω).

multus, *multa* by the side of *melior*, seems also to show a sonant. The comparative keeps the strong form of this root quite regularly (cf. κρείττων beside κράτιστος, ὀλείζων beside ὀλίγος). The Greek μᾶλλον for μl̥ιον has borrowed its vocalisation from the superlative: *melior* is the older form.

mulceo by the side of ἀ-μέλγω may also show a sonant: but the combination *el* passed into *ol* (*ul*) in Latin, except in the forms *eli*, *ell* (v. p. 103 n.): so that the vowel in *mulceo* may be a purely Latin phenomenon. If however it shows a sonant, we may compare the Gk. βρακεῖν (for μr̥κ-εῖν).

morti-s cannot be put on the same level with *forti-s*, as the stem shows *o* everywhere (cf. βροτός), and that vowel is therefore probably original.

cornua may be compared with Sk. *çr̥ṅgā*, and would then be for *corngua*.

We may find the stem in κεράμβυξ (for κr̥ν-), the ε being on the analogy of κέρας.

furnus for *fornus*	Sk. *ghr̥ṇá*, heat.
morbus	Sk. *mr̥dh*, enemy.

The Nasal Sonants.

The nasal sonants differ from the liquid sonants in having no remaining trace of the nasal in Sanskrit and Greek, at any rate in unaccented syllables. Nor are there in the Sanskrit alphabet any nasal semivowels corresponding to the liquid semivowels *l*, *r*. The existence of nasal sonants is therefore a matter of hypothesis; but it is an hypothesis which is so far justified by the results as to have fully established its claim to a place among the laws of the science.

How differing from liquid sonants.

The nasal sonants (written *n̥*, *m̥*) are represented in Greek by *α*, *αν*, *αμ*, in Latin by *en*, *em*. They differ further from the liquid sonants in their origin. Liquid sonants, we have seen, are always due to the loss of an *e* in a syllable containing a liquid; nasal sonants are sometimes due to the same cause, but also result from the addition of a suffix beginning with a nasal to a stem ending with a consonant. We shall consider these two cases separately.

As in illustrating the phenomena of liquid sonants in Greek and Latin, we shall take in sequence the different formations in which nasal sonants are to be found. Another method of arrangement could be pursued, viz. to classify the nasal sonants according as the syllable in which they occur is accented or unaccented. Thus,

In accented and unaccented syllables. (1) The nasal sonant appears in an unaccented syllable before mutes, nasals, and liquids, and at the end of a word, e.g.:

ἑ-κατό-ν (*ἑκν̥τον*) Lat. *centum.*
μέ-μα-μεν (*μεμν̥μεν*) *memento.*
ὄνομ-α (*ὀνομν̥*) *nomen.*

(2) In unaccented syllables before i̯, e.g.:
I.-E. *gm̥i̯ó* *βαμ-ι̯ω = βαίνω* *venio.*

(3) In accented syllables before a consonant, e.g.:
I.-E. *s-ń̥ti* *ἐσ-αντι = ἔᾱσι.* *sunt* for *sent.*

(4) Before sonants, where it becomes a transitional sound, e.g.:
I.-E. *tn̥n-ú* *ταν-υ-* *tenuis.*

In different formations. In thematic aorist. We have seen that the thematic aorist is regularly formed from the weak stem: e.g. from *λείπω* we have *ἔλιπον*. Similarly from the stem *πενθ-* in *πένθος* and *πείσομαι* for *πενθσομαι* we should get *ἔπνθον*. But the three consonants together being unpronounceable, the nasal became sonant, and the result is *ἔπαθον*. In the same way *ἔχαδον* is for *ἐχν̥δον*. The present *χανδάνω*, it is true, has the *α*-vowel; but the future *χείσομαι* (*σ*. 17) for *χενδ-σομαι*, shows the *ε* of the full root, just as *πείσομαι* for *πενθ-σομαι*. So also *ἔλαχον* for *ἐλν̥χον* points to a full root √*λεγχ*, the *o*-degree of which we get in *λέλογχα*.

The nasal sonant also probably appears in the so-called aorists *ἔσσευα*, *ἔχευα*. These forms are more probably imperfects, of which the original inflexion was **ἔχευm̥* for *ἐχεϝm̥*, *ἔχευς*, *ἔχευ(τ)*. The plural and middle voice, as we have already seen, should show the reduced form of the root, and therefore we ought to have *ἔχυμεν*, *ἔχυτε*. These forms do not occur, as the *α* of the 1st pers. sing. has been extended throughout the tense, but the Homeric middle *χύτο* (Ψ. 385), etc., is quite regular.

Similarly, from a stem *κτεν-* in *κτείνω* we ought to get an aorist **ἔκτενα*, **ἔκτεν(τ)*, plural *ἐκτν̥μεν* (*ἔκταμεν*), etc. But in this word the reverse process has taken place, and the weak stem *ἔκτᾰ-* for *ἐκτν̥-* has been extended to the singular in *ἔκτᾰν*, *ἔκτᾰ*. The middle forms in Homer, *κτάμεναι*, *κτάμενος*, *κτάσθαι*, *ἀπέκτατο*, also show the nasal sonant.

In the perfect.

As in the aorist so in the perfect, the plural of the active and the whole of the passive voice is formed from the reduced verb-stem. Therefore from a stem *μεν-* in *μένος* we ought to get a perfect.

sing. *μέμονα* *μέμονας* *μέμονε*.
plur. *μεμν̥μεν* *μεμν̥τε*.

And these forms we find in the Homeric *μέμᾰμεν* and *μέμᾰτε*. Other forms are *μέμᾰτον* (Θ. 413), *μέμᾰσαν* (N. 337), *μεμᾰώς* (passim), but *μεμᾱώς* (Π. 754) and *μεμᾰ́ᾱσι*.

Similarly, from *γεν-* in *γένος* we have the perfect *γέγονα*, plural *γέγᾰμεν* (*γεγν̥μεν*), *ἐκγεγᾰ́την* (κ. 138), infin. *γεγάμεν* (E. 248), and the partic. *γεγᾰώς*, which in the form *γεγώς* survives in Attic tragedy.

In *γεγᾰώς* it seems that *ν̥* before *ϝ* has passed to *αν-*, e.g. *γεγν̥ϝως* = *γεγανϝως*, which, on the analogy of *ἑσταώς*, has passed to *γεγᾰώς*.

So also *γεγᾰ́ᾱσι* (for *γεγν̥ti* = *γεγνᾱσι*) has been assimilated to *γέγᾰ-μεν*, *γέγατον* and become *γεγά-ᾱσι*. The explanation of *μεμᾰ́ᾱσι* is the same. A clear instance of analogous formation, parallel to *γεγαώς* is to be seen in Pindar's *γεγάκειν* (*Olymp.* 6. 49). The similarity of *γέγαμεν* (the plural with weak stem of *γέγονα*) to *ἕσταμεν* led to the assumption of a form *γέγᾱκα* on the analogy of *ἕστᾱκα*. Such too is the probable history of *βέβᾱκα*.

In the perf. mid. we have *τέτᾰ-ται* = *τετν̥-ται*, with the root *τεν-* in *τείνω* (=*τεν-ι̯ω*).

πέφᾰται = *πεφν̥ται*, root *φεν-*; cf. *φόνος*. Other forms are *πεφάσθαι*, *πέφανται*.

A stem *μενθ-* seems to be proved by *μενθῆραι* (Hesych. *μενθήρη· φροντίς*). We shall hardly accept the derivation of the *Etymologicon Magnum*, which derives the words from *μένος* and *θηράομαι*, on the ground that the soul (=*μένος*) is hunted, i. e. governed, by thought. The reduced form of *μενθ-* perhaps appears in *ἔμαθον* for *ἐ-μν̥θ-ον*. *ἔμαθον* may however show the reduced form of the stem *μᾱθ-* in *ἐπιμᾱθής* (cf. De Sauss. p. 152).

Another stem ending in a full consonant is seen in *πεπαθυῖα* (*πεπn̥θυῖα*) beside *πέπονθα*: and probably in Γ. 99 we ought to read with Aristarchus *πέπασθε* (=*πεπαθ-τε*) for the vulgate *πέποσθε*. At the same time it is difficult to separate the stem *παθ-* from Lat. *pat-ior*, where the *a* must be primitive and cannot represent a nasal sonant.

In present stems.

In verbs corresponding to the eighth class of the Hindu grammarians, where the pres. is formed by the addition of the suffix *-nu* to the reduced stem, we find nasal sonants in *τά-νυ-ται* √*τεν-* and *ἄ-νυ-ται*, Sk. *sanuté*, √*san* (obtain). The original sibilant is represented by the aspirate of the Attic *ἁ-νύ-ω* and of *αὐθ-έν-της*.

In nominal stems.

The suffix *-to* takes the reduced form of the root. Hence we have—

	τατός	for	*τn̥τός*	√*τεν*.
Sk. *matá*	(*αὐτό-*)*ματος*	for	*μn̥τός*	√*μεν*.
hatá	(*ὀδυνη*)*φατός*	for	*φn̥τος*	√*ghen-*.
gatá	*βατός*	for	*βn̥τός*	√*gem* (Lat. *venio*).
ratá	*ἐ-ρατός*	for	*ἐρ-m̥τός*	√*rem*.

βᾰτός may also show the weak form of √*βᾱ* in *ἔβᾱν*, but Sk. *gatá* can only come from *gm̥-*. *ἐ-ρατός*, with the common prothetic vowel before the liquid, may be identical with Lat. *lentus*. On the other hand the adverb *ἠρέμα* points to a √*rem* rather than √*ren*, therefore *ἐρατός* is for *ἐρm̥τός*.

The suffix *-ti* also takes the reduced root. So we get *τάσις* for *τn̥σις*. *βάσις* is open to the same doubt as *βατός*. An amplified stem appears in *ἀνδρο-κτασί-η* (*κτn̥σι-η*); full root in *κτείνω* (=*κτεν-ι̯ω*).

The termination *-ú* also was suffixed to the reduced form of the root. This enables us to connect *παχύς* (*πn̥χύς*) with the Latin *pinguis* (for *penguis*, *pn̥gú-is*), the *e* becoming *i* before *-ng*; cf. p. 191). The Sk. *bahú* shows that the original stem was *bhn̥ĝhú*, whence we get *bahú* by Grassmann's law (cf. p. 174). In this case the law must have come into operation before the separate existence of Latin, as an initial *bh* is ordinarily represented in Latin by *f*.

ἐ-λαχύς goes back to *ἐ-λn̥χύς*, the Indo-European *ln̥ghú-*, and is identical with the Latin *levis* for *ln̥huis*, a Latin *eu* corresponding regularly to Indo-European *n̥gh*-.

Similarly βραχύς is for βρn̥χύς, Lat. *brevis* for *brenhuis*. The difference of *pinguis* and *brevis* is due to the fact that the latter shows a velar, the former a palatal aspirated guttural.

So δασύς (δn̥σύς) corresponds to *den-sus*, with a difference of termination. The same nasal sonant appears in βαθύς (βn̥θύς), the strong stem being seen in βένθος (also βάθος).

ensis is Sk. *así*, and is for *n̥sí-s*. The same stem may perhaps be seen in Gk. ἄορ = *ἀσορ (n̥σ-ορ)[1].

πάτος, beside the Sk. *pánthan*, gen. *patháś* (*pn̥-tháś*), seems to be for *πn̥τος. In Latin we have *pon*(*t*)-*s*, which ought to have had a gen. *pent-ís* (*pn̥t-ís*); cf. πώς *πεδός.

The 1st pers. pron. plural seems to have come from an Indo-European *m̥smé*, whence ἄσμε = ἄμμε (Aeolic), or by loss of spirant and compensatory lengthening, ἡμε-, where the aspirate is on the analogy of ὑμεῖς (Sk. *yuṣma*). In the German languages *m̥* = *um*, and we get **ums*(*me*), whence Gothic *uns*.

In suffixal syllables.

In the weak cases (cf. p. 291) of declension the *e* of the fuller form of the stem was dropped: before a vowel the nasal remained as a consonant, before a consonant it became a vowel.

This is specially seen in stems with suffix -*men*-, e. g. stem ποιμεν-, with the weak form in ποίμν-η. The dative plural ποιμέ-σι, in which the initial letter of the termination is a consonant, has been assimilated to the form of the other cases. Originally it stood as ποιμn̥σι = ποιμᾰσι.

φρήν, φρεν-ός with the o-degree in σώφρων, σώφρονος, should show in the dat. pl. φρn̥σι = φρασί, as we find it in Pindar, rather than the Attic φρε-σί. The stem προφρον-, nom. masc. πρόφρων, has in the fem. πρόφρασσα for προφρn̥τι̯α, with which we may compare Περσέφαττα, where we have the same root as in πέ-φα-ται, -φα-τός, etc.

The stem ἐον- has masc. ἐών, fem. ἔασσα for ἐσn̥τι̯α: cf. Lat. *ab-sens*.

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[1] Another view is that ἄορ is for ἀ-σϝορθ, Eng. *sword*.

In the nom. and acc. sing. of neuters in *-men*, the final *a* of Sk. *náma*, Gk. *ὄνομα*, compared with Lat. *nomen*, gives proof of an original sonant. Originally this nasal would have become sonant only when the succeeding word began with a consonant. In *ὄνομα* and the stems similarly declined, *ἡπατ-*, *ὕδατ-*, etc., the sonant nasal remains throughout, thanks to the presence of the dental suffix in the oblique cases.

Beside *náma* *ὄνομα* we may set the nouns of number.

saptá	*ἑπτά*	septem.
náva	*ἐννέα*	novem.
dáça	*δέκα*	decem.

The extended *ὀνόμα-τα* answers to Lat. *cognomen-ta*.

The Sanskrit grammarians give *saptan-*, *navan-*, etc., as the stems of these words, but of the congenital languages Latin and Lithuanian show the labial nasal, while Gothic has final *n*, according to the rule of that language which converts final *m* to *n*.

In the Germanic languages the labial nasal has passed to the dental, on the analogy of the ordinal numbers, where the labial *m* was naturally dentalized before *t*. E. g. *tenth*, *zehn-te*, and *ten*, *zehn*, in place of *tem*, *zehm*.

In Sanskrit the terminations of the ordinals from two to ten are *-tíya*, *-tha*, or *-ma*.

Taking the following—

saptamá	*ἕβδομος*	septimus.
navamá	(*ἕνα-τος*)	nonus for nou̯mus.
daçamá	(*δέκα-τος*)	decimus.

Sanskrit shows the labial nasal in the termination, and these are the only numerals which show a nasal in the ending of the corresponding cardinals. Unless then some strange chance has differentiated the nasals of ordinal and cardinal numbers, we are justified in assuming the same labial nasal in both, and in taking *-a* rather than *-ma* as the derivative suffix of the ordinal (cf. De Sauss., pp. 30–32), e. g.—

saptam-á	*ἕβδομ-ος*	septim-us.

The forms *ἔνα-τος*, *δέκα-τος*, and the u̯ of *octavus* must be dealt with under the morphology of these words (pp. 319, 365).

In Composition and Derivation.

Leaving inflexion for Composition and Derivation, we find that suffixes, which drop *e* before certain endings, also drop it when the theme of which they form part becomes the first member of a compound word. If the second member of the compound begins with a consonant, a sonant will show itself at the end of the first member of the compound. E.g. *ὀνομα-κλυτός*. But in Greek the rule was not faithfully obeyed, and we find such compounds as *ἀρρεν-ο-γόνος* on the analogy of the stems ending in *-ο*.

The Greek theme *ἑν-*, for older *σεμ-*, appears in *ἅ-παξ* for *σm̥-παξ*, and *ἁπλοῦς* for *σm̥πλοῦς*. The same *sm̥-* is to be found in Latin *sim-plex*, *sim-ul*, *sem-el*, *sem-per*.

In terminations.

We can now pass on to the terminations which show instances of the nasal sonant. In these the ϵ, which has been expelled in the stems previously considered, has never existed at all.

The rule is, that the nasal sonant bearing the accent becomes *-an-* and not *-a-* in Greek and Sanskrit.

Thus in the 3rd pl. the ending *-nti* added to a consonantal theme developes a sonant, and as this syllable originally bore the accent the sound is represented by *-an*. *-αντι* appears in Greek as *-ᾱσι*; e.g. in the Homeric *μεμά-ᾱσι*, *γεγά-ᾱσι* (p. 107). Compare also *γεγράφ-ᾱσι*, *λελύκ-ᾱσι*, etc. An ending *-ᾰτι*, *-ᾰσι* appears in the perfects *ἐθώκᾰτι*, *πεφήνᾰσι*, and *λελόγχᾰσι* in the poets (cf. p. 379).

To the influence of accent may be due the *-an-*, Gk. ᾱ, of the present of the root *es*. Sk. *sánti*, Gk. *ἔᾱσι*.

The accent as it exists in Greek affords of course no help to the solution of the question. In saying that the nasal sonant of the ending originally had the accent we refer to the position of the accent in the primitive language, to determine which Sanskrit is a better guide than Greek.

In the 3rd pl. of the perf. mid. we find *-αται* for *-n̥ται* after a stem ending in a consonant in the following cases:—

τετράφαται, Theogn. 42; Plat. *Rep.* 533.
τετρίφαται (-*το*), Hdt. 2. 93.
μεμίχαται, Hdt. 1. 146.
εἰλίχαται, Hdt. 7. 76.
ὀρωρέχαται (-*το*), Π. 834; Λ. 26.
τετεύχαται (-*το*), Λ. 808.
δειδέχαται (-*το*), Δ. 4; η. 72; *δέχαται*, M. 147.
ἔρχαται (-*το*), *ἐέρχατο*, Π. 481.
τετάχαται, Thuc. 3. 13.
ἐσεσάχαται, Hdt. 7. 62.
γεγραφαται, Inscr.
κεκρύφαται, Hes. *Opp.* 386.
ἐπώχατο, M. 350.
τετάφαται, Hdt. 6. 103.
ἀπίκατο, Hdt. 8. 6.

This list only includes stems with a guttural or labial consonant; besides these there are the dental stems, e.g. *ἀγωνίδαται*, *κεχωρίδαται*, *ἐσκευάδατο* of Herodotus, and the Homeric *ἐρηρέδαται* and *ἀκηχέδαται*. The same endings, -*αται*, -*ατο*, also occur after a vowel, e.g. *βεβλήαται*, *κέαται*, *εἵαται*, *πεφοβήατο*, *κεχολώατο*, and in the optat. middle, as in the Homeric *γενοίατο*, *πυθοίατο*, *λαζοίατο*, *ἀγοίατο*, *γευσαίατο*, *δυναίατο*, *πειρῴατο*. The Attic tragedians also employ the same ending; Soph. *Ai.* 842; *O. R.* 1274; *O. C.* 921; *El.* 211, etc.

Miscellaneous instances. The *a* of the acc. pl. and sing. after consonants arises from a nasal sonant, e.g. *πόδας* = *ποδν̥ς* and *πόδα* = *ποδμ̥*. So in Latin *pedem*=*pedm̥*, *pedes* (acc. plur.)=*pedm̥s*.

Miscellaneous instances of nasal sonants are—

viginti for **vigenti* for *vi-kn̥t-i*, Doric *Ϝίκατι*.

For the *ο* of *ε-Ϝίκοσι* cf. p. 370. The soft guttural in Latin in the numbers from 20 to 90 is due to the nasal sonant, e.g. *septingenti* (*septm̥kn̥ti*), where the hard guttural regularly becomes a soft between two sonants.

triens is for *tri-n̥s*; cf. *τριάς* (*τριν̥ς*), which has been assimilated to the stems in -*δ*.

The present partic. in Latin shows the sonant. The original declension was e. g. *bhéront-*, *bhern̥tós* (cf. Sk. *bháran*, *bháratas*). The Greek has assimilated the strong form, the Latin the weak, throughout.

Finally, we have the most common instance of all in the negative prefix Gk. *α* (*αν*), Lat. *en-* *in-*, Gothic *un-*. The *en-* becomes *in-* in Latin from the fact that it generally occurs in unaccented syllables. The *ἀν* before vowels in Greek, where we should expect *ν*, may come from the nasal sonant in accented syllables; compare the Sanskrit *ná*.

Double sonants.

We have now to consider the case of an original combination, *l̥l*, *r̥r*, *m̥m*, *n̥n*.

Osthoff (*Z. G. d. P.* 421) holds that unaccented *m*, *n*, *l*, *r*, *i̯*, *u̯*, before vowels and after a short syllable, have the function of consonants, but that after a long syllable we have *ii̯*, *uu̯*, *m̥m*: *n̥n*, *l̥l*, *r̥r*, without reference to the position of the accent.

The double liquid sonants so produced are represented in Sanskrit by *ir*, *ur*, *il*, *ul*, though the quantity of the *i* and *u* seems to vary, in Greek by *ορ*, *ολ*.

Thus *πολύ*	Sk. *purú.*	*βόλεται*	Sk. *guráte* (?).
Βορέας	*girí.*	*τορεῖν*	*tiráti.*
πόλις	*purí.*	*μολεῖν*	*milati.*
χολάς	*hirā.*	*πορεῖν*	*pūráyati.*
βορά	*giráti.*	*στορ-*	*stirati.*

But Sk. *ir*, *ur* answer to Gk. *αρ*, *αλ* in

βαρύς	*gurú.*	*παρά*	*purā́.*
πάρος	*purás.*		

Latin has *ar*, *al*, *or*, *ol*, answering to Sk. *ir*, *ur*—

haruspex	*hirā́.*	orior	*īrte.*
mare	*mī́ra.*	corium	*cī́ra.*
parentes	*πορόντες.*	vorare	*giráti.*
gravis	*gurú*	mola	*μύλη.*
		storea torus	*-stir.*

The original nasals *n̥n*, *m̥m* are represented by Sk. *an*, *am*, Gk. *αν*, *αμ*.

	tn̥nu Sk.	*tanú*	Gk. τανύ-.
just as	*gr̥rú*	*gurú*	βαρύ.
and	ἐβl̥lον		ἔβαλον.

Other instances with double nasals even in unaccented syllables (while usually *n̥*, *m̥* = *an*, *am* only in accented syllables) are—

ἐτm̥mον ἔταμον,
χm̥mαι χαμαί.

Compare *humi*, where the *u* is due to the following labial, but *e* survives in *hemones* and *Semo* = *Se-hemo*.

λιμπn̥nω λιμπάνω.

In πίτνω there is only one nasal.

In τέκταινα for τεκτn̥i̯a, *αν* replaces *n̥* before *i̯*, and we get τεκτανι̯α, which then by Epenthesis (cf. p. 197) becomes τέκταινα.

βαίνω = βανι̯ω is from original *gm̥i̯o*, where the labial has been dentalised before the semivowel; compare κοινός from κομι̯ος, cf. Lat. *cum* : καίνω beside καμών points to original καμι̯ω.

In Latin the double nasals are represented like the simple nasals by *en*, *em*—

tn̥nu ταvυ- *tenu-is*.

Long sonants.

The Latin representative of *r̥r*, *l̥l* is doubtful: *gula* may be for *gl̥lá* (Osthoff, *Z. G. d. P.* p. 586).

The question of the long sonants is obviously connected in some way with that of the appearance of stems increased by the addition of an indeterminate *svarabhakti* vowel side by side with the simple stems.

Compare—

γενε-τήρ beside	γνη-τός.	κάμα-τος beside	-κμᾱ-τός.
καλέ-σω	κλη-τός.	τέμα-χος	-τμᾱ-τός.
-βελε-της	βλη-τός	περά-σσαι	πρᾱ-τός.
τέρε-τρον	τρη-τός.	δάμα-σις	δμᾱ-τός.
σκελε-τός	σκλη-ρός.	κερά-σσαι	κρᾱ-τήρ.
		πελά-σσαι	πλᾱ-τίον.
		θάνα-τος	θνᾱ-τός.
		ἀ-τάλα-ντος	τλᾱ-τός.

In these groups of words it would seem most probable that we have a double set of roots existing side by side—

(i) The ordinary root extended by the addition of a *svarabhakti* vowel (*γενə-τήρ* beside √*γεν-*).

(ii) A reduced root followed by a long vowel.

The loss of the root vowel is the same phenomenon that we have met with so often before, and originates from the same cause, viz. the place of the accent. With regard to the first class, the question whether we are to consider the *svarabhakti* vowel as an integral part of the root or a merely phonetic insertion is as yet undecided, but we may notice two points:—

(i) The quality of the *svarabhakti* vowel, in Greek at any rate, is determined mostly by that of the preceding vowel. We have *γενε-τήρ*, but *θάνατος*.

(ii) The quality of the *svarabhakti* vowel determines that of the long vowel in the corresponding stem. We have *γνη-τός*, but *θνᾱτός*.

The second class of forms, which exhibit a long vowel, originated from a long sonant *l̥̄*, *r̥̄*, *n̥̄*, *m̥̄*. For the theory of the long sonants we must refer to p. 475.

Long liquid sonants.

The long liquid sonants *r̥̄*, *l̥̄*, are represented in Sanskrit by *īr*, *ūr*. In Greek they appear as *ρω*, *λω*, and also apparently as *ορ*, *ολ*. Latin has *rā*, *lā* where Greek has *ρω*, *λω*, but *ăr*, *ăl* where Greek has *ορ*, *ολ*.

Thus—

Sk. *gīr-ṇá*	*βρωτός*	grānum.
pūrvyá	*πρώϊος*	
stīrṇá	*στρωτός* (short *r̥* in *στρατός*)	strātus (*Z. G. d. P.* 437; De Sauss. 263, 265).
gūrtá		grātus.
pūrṇá		plānus.

Similarly, I.-E. *bhr̥̄gtós* = *frāctus* (*Z. G. d. P.* 178); I.-E. *u̯r̥̄d-i-* = *rādix*, English *root* (short sonant in *ῥάδαμνος*, Goth. *vaurts*, Engl. *wort*); I.-E. *kr̥̄tei̯* = *crātes* (short sonant in Goth. *haurds*, cf. Engl. *hurdle*); I.-E. *tl̥̄tós* = (*t*)*lātus* (*Z. G.*

d. P. 366; *K. Z.* xxv. 49), and so on. So *quārtus* may represent I.-E. *qtu̯r̥̄tós* (*Z. G. d. P.* 435), with a metathesis of *rā* to *ār*.

On the other hand,

Sk. *ūrdhvá*	*ὀρθός*	arduus.
dīrghá	δολ-ι-χός	largus (for dlārgus?).

The full root may appear in ἐν-δελ-εχής.

ūrgá	ὀργή.	
çīrsá	κόρση.	
pūrtí	πόρτις	pars.
ū́rnā	οὖλος for ϝολνος.	
kr̥çá-	κολεκάνος	(cracentes).
īrmá		armus.
kūrdati		cardo.

The above is mainly the list given by De Saussure, but many of the cases quoted are very doubtful. We may, however, be pretty safe in asserting *r̥̄*, *l̥̄* to be represented in Greek by *ρω*, *λω*, in Latin by *rā*, *lą̄*.

Long nasal sonants. The long nasal sonants are more doubtful still, but Osthoff (*M. U.* iv, *Vorwort*, p. iv) sees *m̥̄* in *βâ-θι*, *βή-την*, Sk. *gāta*, by the side of *m̥* in *βάτην*, Sk. *gatá*. (Otherwise *K. Z.* xxvii. 606.) So Sk. *ātís*, Gk. *νῆσσα*, may come from I.-E. *n̥̄ti-* (Lat. *anas* is obscure). Sk. *yātar-* may be for *i̯n̥̄ter-* (cf. *εἰνατέρες*, *janitrices*). The long nasal sonant has also been seen in Gk. *νā-*, *νη-*, of *νη-κερδής*, etc. (*K. Z.* xxvii. 606). But none of this can be considered certain.

CHAPTER VI.

GUTTURALS.

Mutes or Explosives.

EXPLOSIVE letters may be classified either according to the place in the mouth at which they are articulated, or according to the mode of their articulation. Their characteristic as a group is the voiceless moment or check in their pronunciation.

According to place of articulation they can be divided into labial, dental, palatal, and velar sounds. The labials are pronounced at the lips, the dentals at the teeth, the palatals at the hard palate, the velars at the velum or soft palate. The last two divisions may also be grouped together as gutturals, but this term is more properly applied to certain consonants of the Semitic languages, and, as the sounds known as palatals are distinct in origin and treatment from those known as velars, it is better to give each class its proper name. The difference in mode of articulation may be illustrated by the English '*kin*' and '*cool*,' in the former of which the guttural is pronounced nearer the front of the mouth than in the second.

According to the manner of articulation the Explosives can be classed as Aspirated Tenues and Mediae and Unaspirated Tenues and Mediae. The Tenues, being pronounced with the vocal chords wide apart, have no accompanying vocal sound and are also called Surds. The Mediae, being pronounced with the chords close together, have an accompanying sound and are also called Sonant.

The following table shows the notation adopted for the different explosives in this book :—

	Labial.	Dental.	Palatal.	Velar.
Tenues . . .	*p* . .	*t* . .	*k̂* . .	*q*.
Mediae . . .	*b* . .	*d* . .	*ĝ* . .	*g*.
Tenues Asp. .	*ph* . .	*th* . .	*k̂h* . .	*qh*.
Mediae Asp. .	*bh* . .	*dh* . .	*ĝh* . .	*gh*.

The distinction between palatals and velars.

The distinction between palatals and velars is comparatively recent and of great importance in the history of modern philology.

That the Sanskrit gutturals correspond in the majority of cases to gutturals in Greek and Latin has long been a familiar fact. But there have always been a certain number of words in which a Sanskrit guttural was known to be represented by a Greek labial or dental, while the Latin preserved the guttural, but sometimes as *c*, sometimes as *qu*. Philologists have never ventured to separate Sanskrit *ca*, Greek τε, Latin *que*; or Sanskrit *kátaras*, Greek πότερος, Latin *uter* (for *quoter*?); or again Zend *cis*, Greek τίς, Latin *quis*. No adequate explanation however has been given by the older school of philologists of the circumstances under which the guttural was thus modified in the different languages. Curtius, in the first edition of his *Grundzüge*, did indeed distinguish these irregular phenomena by the names of labialisation and dentalisation, but such names are not in themselves a sufficient explanation. It was manifest that the guttural did become a labial or a dental, but to the question under what circumstances the change took place Curtius offered no answer. The explanation that he gave of the phonetic difficulty was that the change was produced under the influence of a parasitic *yod* and *v* sound; but it is clear that what is sporadic and parasitic cannot be grouped under a general law[1].

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[1] It must be added that the remarks in Curtius *G. E.* 479, especially that 'the transformation worked by zetacism (dentalisation) is usually brought about by the influence of neighbouring *i* and *e* sounds' is very near the truth, and in the 5th German edition, Curtius acquiesces in the theory of Asooli, etc., on this point.

The great discovery which has set the phenomena in an entirely new light was originated by Ascoli (*Corsi di fonologia*, p. 42 n.) and elaborated by Collitz (*B. B.* iii. 177), De Saussure (*Mem. Soc. Ling.* iii. 369), and especially Johannes Schmidt (*K. Z.* xxv. 63). To clearly understand it, it is necessary to go back to the Sanskrit.

Sanskrit once contained the following distinct series of gutturals[1], using the term, that is, in its looser sense.

	Hard.	Soft.	Aspirated.
I.	*ç*	*j*	*jh* (*h*).
II.	*k*	*g*	*gh*.
III.	*c*	*j*	*jh* (*h*).

Thus we have—

I. Palatals: *ç*, *j*, *jh* (*h*) (of which *ç* is called in Sanskrit grammars a palatal sibilant, while *j*, *jh* have no special name to distinguish them from the palatalised velars).

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[1] The letters in series II. and III. are called by Whitney (*Sk. Gr.* § 5) respectively 'gutturals' and 'palatals'; but the 'palatals' are recognised as derivative and originating in an alteration of the 'gutturals' (§ 42), i. e. as we shall see, they represent the 'gutturals' before palatal vowels.

ç has come to be a palatal sibilant and is pronounced as '*sh*' (§ 63); but according to the theory now generally adopted it represents an original guttural, though one distinct in kind from those in series II.

j and, in theory, *jh* (which however actually occurs as *h*, § 220), represent under the same symbol two distinct sets of sound; first, the soft aspirated and unaspirated 'palatals,' corresponding to the 'gutturals' *g*, *gh*, just as *c* corresponds to *k*; secondly, the soft aspirated and unaspirated sounds corresponding to *ç* (§ 219).

Some obscurity is unavoidable for two reasons. First, the Sanskrit alphabet has but one set of symbols for two sets of sounds totally distinct in origin. Secondly, the symbols in series III. (*c*, *j*, *jh*) are unfortunately known in Sanskrit grammars as 'palatals,' while on the other hand the series *ç*, *j*, *jh* are called by German philologists 'palatals,' as distinct from the 'velars' *k*, *g*, *gh*.

We have not ventured to introduce any new terminology into a science already overweighted with technical terms, nor have we thought it well to fill our pages with illustrations from Zend and Church Slavonic, which distinguish the soft and aspirated palatals from the corresponding palatalised velars by a special symbol. But it is to be regretted that a subject which is in itself one of the most difficult in comparative philology should be further obscured by an ambiguous nomenclature.

II. Velars: *k*, *g*, *gh* (called in Sanskrit grammars 'gutturals').

III. Palatalised Velars: *c*, *j*, *jh* (*h*) (called in Sanskrit grammars 'palatals').

Now the sounds in Series I, *ç*, *j*, *jh*, are uniformly represented in Greek and Latin *under all circumstances* by κ, γ, χ: *c*, *g*, *gh*, or equivalent sounds.

The sounds in Series II, *k*, *g*, *gh*, and Series III, *c*, *j*, *jh*, regularly interchange with one another in Sanskrit, the latter taking the place of the former before *i* (*y*).

Thus we have:—

√*çuc* (gleam)	*çuk-rá* (bright)	but *çóc-iṣṭha*.
√*vaj* (be strong)	*ug-rá* (mighty)	but *ój-īja-*.
√*arc* (shine)	*ark-á* (sun)	but *arc-ís*.
√*tij* (be sharp)	*tig-má* (sharp)	but *téj-iṣṭha*.

Now *i* (*y*) is the palatal vowel, and the explanation of these phenomena clearly is that the original guttural before the palatal vowel is under its influence pronounced not as a pure guttural, but with a palatal affection.

But this interchange between *k*, *g*, *gh*, and *c*, *j*, *jh*, occurs in Sanskrit not merely before *i* (*y*), but also in some cases before *a*. For instance we have—

√*vac* (to speak)	*vāk-á*	but *vác-as*.
	katarás (which of two)	but *ca* (and).
√*yug* (to yoke)	*yúg-van*	but *yŏ́jate*.
	gharmás (warm)	but *háras* (warmth).

Sk. *a* and Europ. *e*.

In nearly every case however this *a* before which the change takes place corresponds not to an *a* but to an *e* in Greek and Latin. For instance *vácas* corresponds to the Greek stem ἐπεσ-, *ca* to τε, *háras* (with *h* for *jh*) to θερεσ-.

What is the inference? Clearly that the Sanskrit *a* which corresponds to an European *e* is not identical in origin with the Sanskrit *a* which corresponds to an European *a*; but that the two sounds *a* and *e* originally different have become confused and identical in sound and character in Sanskrit, while they have remained distinct in the western languages. But traces of the original existence in Sanskrit of this second palatal vowel are preserved in the palatalisation of the gutturals before those *a*'s which represent an original *e*, while before those *a*'s which are original the guttural remains intact. Indo-European *a* and *e* were only confused in Sanskrit *after* the latter had palatalised the preceding consonant.

Conclusions.

We have now sufficiently established the following facts: that there were originally in Sanskrit two sets of gutturals:—

Palatals.

(1) The Palatals, *ç*, *j*, *jh* (*h*), whose character is unaffected by the succeeding sound.

Velars.

(2) The Velars, *k*, *g*, *gh*, which before the palatal vowels *i* (*y*) and *a* corresponding to an original *e*, passed into the corresponding palatalised sounds *c*, *j*, *jh* (*h*).

Now this double row of gutturals existed in the original Indo-European language. This we should hardly be justified in assuming from the evidence of Sanskrit alone, but it is conclusively proved by the phenomena not merely of Latin and Greek, but also of the North-European and of the other Arian languages.

Without discussing this further for the present, we may lay down the following laws. The original Indo-European language possessed two sets of gutturals—

Velars.

(1) The Velar gutturals, *q*, *g*, *gh*, which, under the influence of succeeding sounds, took different forms in different languages. We may divide the Indo-European languages into two groups, according to the way in which they represented these sounds.

Languages of West.

On the one hand, in Greek, Latin, and German, *q*, *g*, *gh* continually appear as *k*-sounds, or their equivalents, with a succeeding labialisation *u̯*, e.g. I.-E. *qis*, Lat. *quis*. We are not to regard this *u̯* as a 'parasitic' sound, but rather to suppose that the labialised guttural was originally a simple sound, differing, that is, from the complex sound produced by the addition of the semivowel *u̯* to the palatal guttural *k̂*, as in *ek̂-u̯os*, Sk. *áç-va*, ἴκ-ϝος, *eq-uos*. Still it must be admitted that the languages of this group are not consistent in exhibiting the labial affection in all cases; frequently the labialisation appears in one language and not in the rest, or in one word but not in another in the same language, and under apparently the same circumstances.

Languages of East.

On the other hand, in the Eastern and Slavonic languages, with which, apart from Sanskrit, we are not concerned, the *u̯* as an inherited affection is entirely absent; but it is not possible to say whether these languages never possessed the sound or whether they let it drop in pre-historic times.

The Velar gutturals then are represented in the different languages as follows:—

Velars in Sanskrit;

In Sanskrit by *k*, *g*, *gh*, but before *i* (*y*) and *a* (=*e*), by the corresponding palatalised gutturals *c*, *j*, *jh* (*h*). In neither case is there any trace of labialisation.

in Greek.

In Greek the velars appear either with a labial affection or without. Without it (when we write them *q*, *g*, *gh*) they are κ, γ, χ: with it ($k^{\text{u̯}}$, $g^{\text{u̯}}$, $gh^{\text{u̯}}$) they become before ι, ϵ the corresponding dentals τ, δ, θ: before *o*, nasals, liquids, τ, θ, *s*, the corresponding labials π, β, φ.

Where *u̯* precedes or follows the velar, they are represented by κ, γ, χ.

In Latin without labialisation the velars become *c*, *g*, *gh* (*g* or *h*); with labialisation $k^{\text{u̯}}$ becomes *qu* or *c*; $g^{\text{u̯}}$ becomes *gu*, *g* or *v*; $gh^{\text{u̯}}$ becomes *f*, *b*, *gu* or *v*.

The following table gives the various representatives:—

Indo-European.	Greek.	Latin.	Sanskrit.
q	κ	c	*k*, *c*.
$k^{\text{u̯}}$	κ, π, τ	c, qu	
g	γ	g	*g*, *j*.
$g^{\text{u̯}}$	γ, β, δ	gu, v, g	
gh	χ	g, h	*gh*, *jh* (*h*).
$gh^{\text{u̯}}$	χ, φ, θ	f, b, gu, v	

Palatals.

(2) The Palatal gutturals, *k̂*, *ĝ*, *ĝh*, appear in Latin, Greek, and the Teutonic languages as mutes, but in the Slavonic and

Eastern languages, including Sanskrit, as spirant sounds. This difference of treatment may perhaps reflect an original difference of dialect in the parent speech.

The following is a table :—

Indo-European.	Greek.	Latin.	Sanskrit.
k̂	κ	c	*ç*.
ĝ	γ	g	*j*.
ĝh	χ	h, g	*h*.

Labialisation.

Curtius explained the transformation of gutturals to labials and dentals by supposing that the gutturals developed after them a 'parasitic' or 'sporadic' semivowel *u̯* or *i̯*; just as we have the palatal guttural followed by *u̯* in ἐk̂u̯os, Lat. *eq-uos*, where it is indistinguishable from the simple labialised velar in *qo*=Latin *quo*. But the later theory differs from that of Curtius in supposing two originally distinct sets of gutturals, and not one set modified or not as the case might be by a sporadic *i̯* or *u̯*. As has been stated above, however, this *u̯* sound is not always constant. We are to regard it as an original part of the velar sound, but we must yet admit that the conditions under which it sometimes appears and sometimes does not, are not yet completely known. For the Indo-European *q* we get normally Latin *qu*, Gothic *hw*: but, on the other hand, there are cases where the labial semivowel has completely disappeared, and where we have to enquire whether a Greek κ or Latin *c* corresponds in Sanskrit to a *k* or a *ç* before we can decide to which order of gutturals it belongs. Practically then it is necessary to distinguish between those cases where the velar is labialised by a succeeding *u̯*-sound (which we shall write k^u, g^u, gh^u), and those cases where it is not, (*q*, *g*, *gh*). We shall proceed to illustrate the theory under each of these six heads.

Indo-European.

I. Indo-European *q* (the unlabialised hard velar) is in Sanskrit *k*, Greek κ, Latin *c* before *a*, *r*, *l*.

(Where the Sanskrit is not given, the character of the sound is determined by other languages—Zend, Lithuanian, Church Slavonic, etc.)

Sanskrit.	Greek.	Latin.
kákhati (he laughs)	καχάζειν	cachinnus.
	κολώνη	collis, excello.
	καμάρα	camurus.
	κάπρος	caper.
kṛpānas (sword)	καρπός	carpo.
√*kṛ* (mention)	κᾶρυξ	car-men.
karkāṭas (crab)	καρκίνος	cancer (for carcer).
	κάπετος, σκάπτω	scobs, scabo.
	κλάζω, κλαγγή	cla-n-go.
	κληίς	clavis, conclave, claudo.
	κρώζω	crocio, gloctorare.
tarkús (spindle)	ἄτρακτος, τρέπω ἀτρεκής, τερπικέραυνος	torqueo.

There is labialisation in *τρέπω*, *torqueo*, and in the derivative *τερπικέραυνος*.

	ἄκαρον (blind, Hesych.)	aquilus, aquilo, aquila.
kapís (incense)	καπύω, καπνός, κεκαφηώς	vapor (?).
√*kṛt* (to spin)	κάρταλον, κλώθω (l̥̄)	crātes (r̥̄).

We find the short liquid sonant in Gothic *haurds*, English *hurdle*.

kalamas (writing-reed)	κάλαμος	calamus, culmus.
√*kṛt* (to cut)	κείρω	curtus (*kr̥tó*-).
√*kūrd* (to leap)	κράδη	cardo.
	σκαίρω	scurra.
√*sku* (to cover)	σκῦτος	scutum.

We may perhaps compare *obscurus* and *σκιά*.

	κράνος	cornus (*kr̥no*-).
√*kṣi* (to possess)	κτίζω, εὐκτίμενος, ἀμφικτίονες, κτίλος	quies, tranquillus; cf. Eng. *while*.

In Latin we have in this instance labialisation.

Sanskrit.	**Greek.**	**Latin.**
aṅkás (hook)	ἀγκών, ὄγκος	uncus.
çarkarā (flint)	κρόκη, κροκάλη	calx, calculus.
√*rakṣ* (to protect)	ἀρκέω, ἀλκή, ἀλέξω	arceo.
tákman (child)	τέκνον	Eng. *thane.*
takṣan (carpenter)	τέκτων	tignum.

In some of the above instances an original *q* appears unlabialised before letters other than *a*, *r*, *l*, though with a following *a*, *r*, *l* in some connected form. The following are more irregular cases of the absence of labialisation:—

kālas (black)	κηλίς (κᾱλίς)	caligo.
kárakas (cocoa-nut shell)	κάρυον	carina.
kḗsara (hair)	καῖρος (thread of warp, Hesych.)	caesaries.
√*kamp* (to tremble)	κάμπτω	campus.
karkaras (hard)	κάρχαρος.	
kalyás (sound)	καλός (Ep. κᾱλός)	Eng. *hale.*
kanyā (girl)	καινή.	
√*kṛ*, *kṛṇóti* (to do, make)	κραίνω, κέρδος ναύ-κρᾱρος	creare, Ceres.
kravís, *krūrás* (raw flesh)	κρέας, κρύος κρυόεις κρύσταλλος	cruor, crudus. crudelis, cruentus.
√*kaṣ* (scratch) *kaṣati*	κάστωρ.	
	καλύπτω, καλύβη κύλιξ, κάλυξ	occulo, clupeus. culullus, calix.

In this group there are traces of labialisation; *occulo* is for **obquelo*, with *el*=*ol* before a vowel, and *quol* written *cul*. In the *S. C. de Bacchanal.* we get *oquoltōd*, which preserves the labialisation.

	καλεῖν	calare, kalendae.
√*kal* (to drive)	κλονεῖν (for κολ-νειν)	pro-cella.

Sanskrit.	Greek.	Latin.
	κλάω	clā-des, culter, clava.

culter is for *ql̥tr-* : *clādes*, *clāva* from *ql̥̄-*.

Gladius, if not a foreign word of Celtic origin, may be connected, the *c* being softened to *g* before the liquid, as in *gracilis*.

√*kṛ*, *kir* (scatter) *kiráti*	κρίνειν	cerno.

In Sanskrit one or two late forms show *sk* (Whitney, *Supplement*, p. 22).

kṛças (slim)	κολεκάνος, κολοκάνος (Hesych.), κολοσσός	gracilis. Old Lat. cracentes.
√*skhal* (stumble)	σκολιός	scelus.
kaṅkanī (ornament with bells)	κανάζω	cano.
√*skand* (leap)	σκάνδαλον	scando.
√*kṣad* (divide)	σχάζω	scandula.
	κολάπτω, κόλαφος, σκάλοψ, σπάλαξ, σπαράσσω	scalpo.

The *o* of κόλαφος, etc. is irrational; σπάλαξ, σπαράσσω show labialisation from the allied forms.

The Ionic pronominal stem κο- in κῶς, κοῦ, etc., as opposed to πῶς, ποῦ, *quo*, *quot*, etc., shows a dialectical peculiarity, so far unexplained. But the whole group of words from this root presents difficulties not yet fully cleared up; *uter*, e. g. can hardly be separated from πότερος, yet cannot by the laws of Latin phonetics stand for **quoter* or **cuter*.

Again with an original *q* we have—

	κόμη	coma.
	κορώνη	corona.
	κοτύλη	(catinus ?).
	κόρη, κούρη, κουρίδιος	(curtus ?).

Cf. κουρίξ, κόρση. According to Curt. (*Stud.* i. 250, *G. E.* 148) to be connected with κείρω, because maidens before marriage dedicated their hair to the goddesses (*v.* Ebeling, *Lex. Hom.* s. v.).

	κώδεια	cauda.
kāravas (crow ?)	κόραξ, κορώνη	corvus, cornix.

Sanskrit.	Greek.	Latin.
káṇas (flour-dust)	κόνις	cinis.
√*kal kaláyati* (to urge on)	κέλης	celer, celox.
kōkilas (cuckoo)	κόκκυξ	cucus.
kanthā (garment)	κέντρων, κόντος	cento.
kavís (wise)	κοέω, ἀ-κού-ω	cavere.

Here an initial *s* is lost; cf. Ger. *schauen*, Eng. *show*, and Gr. θυο-σκόος.

The velar in combination with *u*.

A labialised *q* (k^u) is represented in Greek by κ, in Latin by *c*, if *u* follows or precedes—

vṛkas (wolf)	λύκος (ϝλυκ^{u}ος).	

The Latin *lupus*, owing to its *p*, must be borrowed from the Italian dialects; Goth. *vulfs*, Eng. *wolf*.

nákti (night)	νυκτ-ός	cf. noct-is.
cakrás (wheel)	κύκλος (*k^uek^ulo-s*).	

Cf. Ang.-Sax. *hweohl*, *hweohol*, Eng. *wheel*.

√*ruc* (to shine)	λευκός	lucet.
rugá́, rōgas (sickness)	λυγρός, λευγαλέος	lugeo.
yugam	ζυγόν	jugum.
√*muc*, *muñcati* (release)	μυκτήρ	mucus.
ōkas (repose)	εὔκ-ᾱλος.	

Hence βουκόλος, but *οἰοπόλος*, *αἰπόλος*, etc. (cf. De Sauss. *Mém. Soc. Ling.* vi. 161.)

We may add σκῦτος, κύλιξ, which appear above.

The labialised hard velar.

II. The velar *q* with the subsequent labialisation (k^u) becomes in Greek before the thin vowels ι ε, the corresponding dental τ. Before similar vowels in Sanskrit it becomes the palatal *c*. But between Sanskrit *c* and Greek τ there is no immediate historical connexion. The dental only appears in Greek in those cases where other words of the same group show a π before the full vowel ο, e. g. τέλλω : πόλος, τέο : πόθεν (v. infra). We must distinguish between the cases where the velar is labialised ($k^u + e$), and those in which it is not ($q + e$). In the former case we have in Sanskrit the palatal *c*, but in Greek and Latin τ, *qu* (e. g. *cis*, τίς, *quis*, Indo-European *$k^u$is*). In the latter case we have in Sanskrit *c*, but in Latin and Greek *κ* and *c* (e.g. *κέλης*, *celer*, Sanskrit *cal*, Indo-European *qel*; cf. *κέντρον*, *κείρω*, etc. above).

We must therefore distinguish these two cases—

Before *e*, *i*.

(i) k^w becomes in Greek *τ*, in Latin *qu* (*c*) before *e*, *i*.

√*car*, *cárati* (he proceeds) } *τέλλω*, *τέλσον* colo, inquilinus.

For *colo* from **quelo* v. p. 189.

Sanskrit.	Greek.	Latin.
ca	*τε*	que.
-ca	*ὅ-τε*	quis-que.
ci	*τίς*	quis.

Compare the Ionic *τέων*, *τέοισι*, *τέο*, *τέῳ*.

catvā́ras (four) *τέτορες* quattuor.

For the various forms of this root cf. p. 369.

vā́cya (voice) { *ὄσσα* (through *Ϝοτι̯α* from *Ϝοκ*^{w}*ι̯α*) } voc-is.

√*ruc* (shine) { *λεύσσω* (from *λευκ*^{w}*ι̯ω*) } lucis.

√*sac*, *sācya* (follower) *ἀ-οσσητήρ* socius, sequor.

ἀοσσητήρ is for *sm̥-sok*^{w}*i-eter*: showing the same root as *ἕπομαι*; v. infra.

√*pac* (cook) *πέσσω* (from *πεk*^{w}*ι̯ω*) coquo.

Coquo is by assimilation for **pequo*, becoming **quequo*, as *quinque* is for **penque*, *prope* for **proque* (*καὶ πρόκα τε* Hdt.); cf. *proc-simus*; *popa* is an Italian word from the same root.

Indo-European *enik*^{w}*i̯ō*, *ἐνίσσω* for *ἐνικ*^{w}*ι̯ω*, cf. *ἐνίπ-τω*.
" *bhak*^{w}*i̯a*, *φάσσα* for *φακ*^{w}*ι̯α*, cf. *φάψ*.
" *k*^{w}*etm-*, *k*^{w}*otm-*, *ἔ-τετμ-ον*, cf. *πότμ-ος*.
" *ok*^{w}*is*, *ὄσσε*, *τριοττίς*.

The guttural appears in *oculus*, Boeot. *ὀκ-ταλλος*, the labial in *ὄψομαι*, *ὀφθαλμός*, *ὄμμα* (v. infra).

Compare (Osthoff, *Z. G. d. P.* p. 578).

τε-τι-ηώς, } curare, Old Lat.
τε-τι-ημένος } coerare, coirare.

Before *o*, etc.

(ii) The labialised velar k^w becomes in Greek *π* before the full vowel *o*, and before *τ*, *θ*, *σ*, liquids and nasals. In Sanskrit the guttural *k* is unaffected. In Latin we get *qu* or *c*.

In the following instances we get τ before ι, ε, but π before ο, etc. in connected words in Greek.

Sanskrit.	Greek.	Latin.
(i) _ci_	τίς, Ion. τέο, etc.	quis.
(ii) _kátara_	πότερος, πῶς, ποῦ, ποῖ, πόθεν	uter (for quoter?).
(i) _páñca_	πέντε	quinque.
(ii) _panktí_	πέμπτος, πεμπάς (πεμπη̥s).	

Lesbian πέμπε has the consonant from the ordinal.

(i) _sácya_	ἀ-οσσητήρ, ἕταιρος	sequor.
(ii) _sākám_	ἕπομαι, ὀπ-άονες	socius.

The common root is _sek*_, _sok*_ (_K. Z._ xxv. 145).

(i) _catvā́ras_	τέτορες	quattuor.
(ii) _turī́ya_ for *_kturīya_	τράπεζα	quartus (for _qtu̯r̥tós_).
√_pac_ (cook).		
(i) _pácyatē_ (he cooks)	πέσσω (= πεκ*ι̯ω)	coquo.
(ii) _pákti_, derivative	πεπτός, πόπανον.	
√_vac_ (speak).		
(i) _vā́cya_ (voice)	ὄσσα	vox.
(ii) _vāk-á_	ὄψ.	
√_ci_, _cāy_ (observe).		
(i) _cā́yati_	Arcad. τείω.	
(ii) Zend _kaēna_	ποινή.	

For the connexion of these two cf. ψ. 312 ἀπετίσατο ποινήν and Hdt. 3. 14 ποινὴν τίσοντες. The Latin _poena_ will in this case be borrowed. It has been suggested to connect Latin _quaero_ (= _k*ai-ro_), but cf. p. 140.

(i) Zend _ashi_ (ii)	τριοττίς, ὄσσε, ὄσσομαι, ὄψομαι, ὄμμα, ὄπωπα, ὀπή.	oculus.

τριοπίς in Hesychius is the result of confusion with ὀπή.

√_car_ (move).		
(ii) Sanskrit _cárati_	τέλλω	colo.
(ii)	πόλος, πωλέω, ἔ-πλ-ετο.	

The connexion is confirmed by the interchangeable phrases in Homer, *περιτελλομένων ἐνιαυτῶν* and *περιπλομένων ἐνιαυτῶν*. The *τ* of *ἀνατολή* has come from that of *ἀνατέλλω*, the *π* of *πέλομαι* from that of *ἔπλετο*, after the two groups of words had come to be considered distinct. We may perhaps compare *αἰπόλος* (*ἀϝι-πολος*) and *upilio* (*oụ-pilio*). The latter may be an Oscan word, as in that dialect Indo-European *q* becomes *p*. The true Latin is seen in *colo* (for **quelo*) *inquilinus*. But *βουκόλος* is a difficulty, as no trace of a guttural form of this root is found in Greek.

(i)	ἔ-τετμ-ον,
(ii)	πότμ-ος.

This being true we cannot connect *πότμος* with *πίπτω*, *peto*.

(i)	Sanskrit *rucya*	λεύσσω, λοῦσσον	luceo, lu(c)na, etc.
(ii)	Zend *raokshna*	λοφνίς (Hesych.).	

λοφνίς will be for *λοπ-νίς* with aspiration before the nasal.

(i)	ἐνίσσω.
(ii)	ἐνίπτω, ἠνίπαπον, ἐνιπή.
(i)	φάσσα.
(ii)	φάψ, φαβός.

In the following instances the labial has either permeated the whole group in Greek or alternates with the guttural.

√*ric* (leave) *reca*, deriv.	λείπω	licet, relictus. linquo, reliquus.
	ἔννεπε, ἔσπετε	insece, inquam.

The root is *seq-*, *ἔννεπε* is for **ἔνσεπε*, *ἔ-σπ-ετε* shows the reduced form. The root is preserved in the Latin *insece* (e. g. *virum mihi, Camena, insece versutum* of Livius Andronicus); *in-quam* for **in-squa-m* (as *tranquillus* for *tran-squillus*); *in-sec-tio*, possibly in '*sector*,' a bidder. An identical root meaning 'to cut' appears in *seco* beside *co-in-quo*.

	τρέπω, τερπικέραυνος	torqueo.
	ἄτρακτος	torculum.

ἄ-τρακ-τος (*τr̥κ-τος*) will correspond to *tortus* (*tr̥ctús*).

yákṛt	ἧπαρ	jecur.

I.-E. *j̥ĕkʷr̥(t)*.

A further instance is ἐπριάμην, Sk. *krī-ṇā́-mi*. We may also connect, with Curtius, Ἀπίη (γῆ) with Lat. *aqueus*, *aqua*, I.-E. *aq*; cf. English *ey-ot*, *is-land* (where *s* is irrational and due to *isle*, *île*, *insula*) A.-S. *i-eg*.

Graphic representation in Greek, With regard to the question of orthography, it is to be noticed that the original Greek alphabet contained a second hard guttural, ϙ, or *koppa*, which appears in inscriptions mainly before *ο*, *υ*, *ρ*, *λ*. Thus we find *ϙοριυθόθευ*, *ϙύϙνος*, *Λοϙρός*, *Πάτροϙλος*, but only rarely forms like Ἑϙτωρ. Though the letter early disappeared from the Greek alphabet, yet it seems originally, as opposed to *κ*, to have represented the velar; and in this character it was introduced into the Latin alphabet as Q, and there became permanent.

in Latin. Q passed into the Latin alphabet, but not into the Oscan and Umbrian, probably from the Chalcidian alphabet of Cumae (Mommsen, i. 213, 217). It is found before the consonantal *u̯* and before *o*, e. g. the Ambrosian MS. of Plautus is said to read *qolunt* in *Pseud.* 822. But from the earliest times we find a confusion arising between *qo*, the graphic representative of *k̊o*, and *quo*, representing *qo*, *k*^{w}*o*; e. g. **qom* (*k̊om*, the preposition *cum*) is confused with *quom* (the adverb, *k*^{w}*om*, *qom*). In fact *q* comes to be used to represent the hard guttural, whether velar or palatal, before *u* and *o*; so we get *pequnia* (beside *pecus*, Sk. *paçu*), *quoqirca*, etc., where *q*, *qu* represents simply *c*.

Alternation of *qu* and *c*. In the Augustan age *quo* became *cu*, perhaps originally before final consonants in *cum*, *cur*. Any further change, however, may be the result of analogy. For

quoius became *cuius* because of *huius*.
quoi *cui* *hui-c*.
quom *cum* *tum*.
But *quorum* remains, because of *horum*.
quoniam remains, because **tuniam* did not exist.

Outside the relative we have *ecus*, *hircus*, *aecus*, *inicus*, *propincus*, *posticus*, before final consonants, but always *reliquos*, *pedisequos* (*relicus* is late), perhaps because the termination is originally *-ou̯os*, not merely *-os* (cf. Ribbeck *ad Georg.* 4. 172; *Aen.* 8. 450). An initial *que-* passes into *co-*, except before *r*; e. g. *colo* for *quelo*, but *quercus*, *querquerus*, etc.

The hard palatal *k̂*. The palatal *k̂* is represented in Sanskrit by *ç*, in Greek by *κ*, in Latin by *c*, irrespective of the subsequent sound.

Sanskrit.	**Greek.**	**Latin.**
√*çaṅs* (praise), *çáṅsati* (he praises)	*ἐγ-κώμιον*	Camena, Camillus.

In spite of the form *Casmena*, *Casmillus* in Festus, it is doubtful whether we can connect *carmen* (as though for **casmen*), as in the combination *-sm-* *s* vanishes, e.g. *dusmo* (Paul. *Fest.* 67) = *dumus*, *prismo* (Corfinium) = *primus*, *dismota* (*Sc. de Bacch.*) = *dimota*. So **casmen* should become **cāmen*.

	κεῖνος, κῆνος	hi-c, si-c, tun-c, nun-c.
	κεῖθεν, καί	cis, citra, cĕdo, cēteri.

Cēteri seems parallel to *κεῖθεν* : *c-i-s*, *c-i-tra* may show the weakest root, *i* being merely an euphonic insertion.

√*çar, çal* (cover)		
çālā (house)	*κλίσιον, καλιά*	celare, cella, clam, color, cucullus.

καλιά, *cucullus*, perhaps *color*, show the reduced root √*k̂l̥*, *clām* may be for *k̂l̥m*. *Celo* may be explained as the result of the same confusion of the *ē*- and *ā*-Ablauts that we get in *cēdo*, *cădo*; *sīca* (for *sēca*), *saxum*, etc. (p. 249); *super-cilium* may be put here, or else cf. *κύλα, κυλοιδάω*.

çirá (for *çr̥rá*)	*κάρα, κάρηνα*	cerebrum, cervix.

For this group of words cf. p. 302.

çatám	*ἑκατόν*	centum.
√*çri, çr̥* (resort), *çráyati*	*κλίνειν, κλιτύς*	in-clinare, clivus, clitellae, Clitumnus.
	κέρας, κρῑός	cornu, cervus.
√*çru, çráva* (renown)	*κλέϝος, κλύω*	cluere, gloria.

Gloria is for *cleu̯eria* which becomes *clou̯eria*, and the hard guttural passes into the soft before *l* as in *cracentes* : *gracilis*.

çrṓni (hip)	*κλόνιον, κλόνις* (= *κλοϝνις*).	clunis.
hr̥d (heart)	*καρδία*	cord-is.

The initial *h* of Sk. is not original (Whitney, *Sk. Gr.* § 66). Wharton, (*Etyma Graeca*) compares *çrad-dhā*.

çānas (grind-stone)	*κῶνος*	cos, catus, cuneus.

Catus is for *cətus* (cf. sətus = satus); *cautes* from the same root ought not to have the diphthong; cf. *cotibus* (Verg. *Ecl.* 8. 43); *cŭneus* for **cŏneus* before the nasal.

çarkara (flint)	*κρόκη, κροκάλη*	calx, calculus.

Sanskrit.	Greek.	Latin.
√*çad* (fall)	*κέκăδον*	cădere, cēdere, cassus, cadaver, cessare.

We can hardly connect *calamitas* (Old Lat. *cad-amitas*) because of *incolumis*.

çakuna (bird)	*κύκνος*	ciconia.

The *υ* in *κύκνος* is due to the guttural.

çaṅkhá (cockle)	*κόγχη*	congius.
√*çaṅk*, *çáṅkate* (doubt)	*ὄ-κν-ος*	cunctari.
√*çi* (lie) *çéte*	*κοίτη* *κεῖμαι*	cunae (coenae). civis (ceivis).
	ἐγκυτί	cutis.
√ *çū*, *çvā*, *çvi* (to swell)	*ἐγ-κυέω*, *κῦμα*, *κοῖλος*	cumulus, cavus, caulis.

***inciens* = *incu̯iens*, cf. *fio* for *fu̯io* (*φυ̯ω*).**

	κῖκυς	queo (*k̑u̯*).

In this instance *k* + *u̯* is indistinguishable in Latin from *k^u*, but the sound is proved by the allied languages to be palatal.

çváçura (father-in-law), *çvaçrū́*	*ἑκυρός*	socer, socrus.

In this case the initial *ç* of Sk. represents an original *s* (*Z. G. d. P.* 499).

√*çās* (order), *çasti*	*κανδαρός* (·*ἄνθραξ* Hesych.)	candidus, castus (= cand-tus).

For *dh* + *t* = Lat. *st* cf. p. 207.

√*çi* (sharpen)	*κίω*, *κίνυμαι*, *κινέω*	cieo, incitare, citus.
çvan (dog)	*κύων*	canis.

***Canis* is for **cu̯anis* or *cu̯onis* with Indo-European *u̯o* = Lat. *u̯a* (p. 302).**

áçma (stone)	*ἄκμων*	āla (ac-sla), axis.
√*diç* (point), *diçáti*	*δείκνυμι*, *δίκη*	dico.
viçati	*εἴκοσι*, Dor. *Ϝίκατι*	viginti, viciens.
√*naç* (be lost)	*νέκυς*	nex, noceo, noxa.
√*viç* (enter), *veçá* (house)	*οἶκος*	vicus.

The Greek *οι* corresponding to Lat. *ī* (*ei*) is a difficulty; cf. *οἶνος* : *vinum*, but the word may be borrowed. From the same root may come the *Δοριέες τριχάϜικες* (*τ*. 177), the Dorians of the three clans, but cf. *κορυθάιξ*.

Sanskrit.	Greek.	Latin.
áçva (horse)	ἵππος, ἴκκος (*E. M.* 474. 12).	equus.

But though the connexion is certain, the word is difficult. In Greek k̂ + u̯ is indistinguishable from k^{u} before a dull vowel. *ἴκκος* is the result of regressive, *ἵππος* of progressive assimilation, or we may compare new Ionic *κῶς*, Att. *πῶς* (with a velar). The aspirate in *ἵππος* is irrational, and is not seen in compounds like Γλαύκιππος. The ι of Greek (Indo-European *e*) is unexplained.

√*piç* (to deck)	ποικίλος	pi-n-go, pictus.
√*naç* (to reach)	ἐνή-νοχα ἔνεγκον (ἠ-νε-νκ-ον).	(nanciscor, nactus).

The soft velar *g*.

The law of the transformation of the soft velar *g* is precisely the same as that for the hard velar *q*.

In Sanskrit, where there is no trace of a succeeding labial *u̯*, it becomes the corresponding palatal *j* before the thin palatal *i* (*y*) and *a* (= I.-E. *e*). Elsewhere it is *g*. But it is to be noticed that Sanskrit has no special symbol to distinguish the palatalised velar media from the true palatal *j*.

In Greek, if labialised, it becomes before ι, ε the corresponding dental δ : before ο, τ, θ, ς, liquids and nasals, the corresponding labial β or its equivalent. Otherwise it appears as γ.

In Latin it would seem in the first instance to have become *gu̯*, just as *q* appears as *qu*, but this *gu̯* only remains after nasals in the middle of a word. Initially it appears as *g* before consonants, as *v* before vowels. Medially between vowels it is *v*.

Unlabialised.

I. Velar *g* unlabialised is Greek γ, Latin *g*.

√*jan* (to beget)	γένος, γίγνομαι	genus, gigno.

Brugmann reckons this word as showing a palatal *ĝ* (*Grundriss*, p. 293) and indeed the guttural is very stable throughout the derived languages. But we may find traces of labialisation (g^{u}) in Boeot. *βανά* (g^{u}ŋ̥-*ná*), beside *γυνή* and Homer *μνᾶσθαι* (for **βνᾶσθαι*). The dental may also appear in *δίδυμος* (beside *geminus* for *gen-minus*?)

yugá (yoke)	ζυγόν	jugum.
√*bhuj*, *bhugna* (to bend),	φυγή	fugio.
gánja (contempt)	γαγγανεύω	gannire (*gagnire).

Sanskrit.	Greek.	Latin.
gargara (whirlpool)	γαργαρεών	gurges.

Labialised forms are seen in *βάραθρον*, *δέρεθρον*; v. infra.

Sanskrit.	Greek.	Latin.
gaṇḍá (cheek)	γνάθος, γένυς	(gena (?), gn̥-a).

This is in Greek a case of metathesis of the nasal without lengthening the vowel (p. 115).

Sanskrit.	Greek.	Latin.
√*garj* (bellow)	γοργός.	
grāmas (community)	γάργαρα, ἀγείρω, ἀγορά.	grex.

II. Velar *g* labialised (g^u), but with *u* preceding or following, is in Greek *γ*. Labialised, but in connexion with *u*.

Sanskrit.	Greek.	Latin.
	ἐγ-γύ-η γύαλον	voveo (gu̥ou̯-eo). vola (hollow of the hand). volema (large pear).

γυνή beside βανά, μνᾶσθαι.

It is possible that this word should be separated from the Sk. √*jan*, Greek *γίγνομαι*, Lat. *gigno*. We may compare the Cretan *πρεισγευτᾶν* (Cauer, *D. I. G.* 127), beside Att. *πρέσ-βυς* where the *β* is by false analogy before *u̯*. The double stem was *πρεσ-γυ-*, *πρεσβεϝ-*; cf. Lat. *pris-cus*.

III. The velar *g*, labialised (g^u), is in Sk. *g*, *j* (which represents an unlabialised form), Gk. *β* before *ο*, *τ*, *θ*, *s*, liquids and nasals, Lat. *gu̯* (but for representation in Latin, see p. 139). Labialised before *o*, etc.

Sanskrit.	Greek.	Latin.
√*gem* (go)	βαίνω	venio.

βαίνω, *venio*, both go back to *g^um̥i̯ō*: the labial sonant *m̥* becomes *n* before *i̯*, as in *χλαῖνα* (*χλm̥i̯a*) beside *χλαμύς*, *κοινός* beside *cum*, *καίνω* beside *καμόντες* (the dead), *αἰνός* for *ἀμ-i̯ος* (Sk. *ama*; cf. Goth. *Amal-rîch*), *quoniam* for **quomi̯am*, *conicio* for *comi̯icio*, etc. The *m* may be preserved in *meare* for **gmeare*, just as *natus* is for *gnatus* (Osthoff, *Z. G. d. P.* 550); cf. Goth. *qiman*, Eng. *come*.

Sanskrit.	Greek.	Latin.
gurú (heavy)	βαρύς	gravis.

For *gravis* cf. p. 187.

Sanskrit.	Greek.	Latin.
√*jiv* (to live)	βίος	vivus.

Lat. *vivus* points to original *gu̯igu̯os*, though other languages point rather to a palatal, e. g. Slavonic has *z*. For the *β* of *βίος* we may compare *βανά*, Sk. *gnā*.

Sanskrit.	Greek.	Latin.
√*ji* (to conquer), *jyā* (power)	βία	vis, vi-olentus.

The Lat. *vis* may, however, be connected with Gk. *ϝίς*, *ϝῖνες*, *ϝῖφι*.

Sanskrit.	Greek.	Latin.
jyā, f. (bow-string)	*βιός*.	
√*gu* (to sound)	*βοή, βοᾶν*	(boere, boare).

The guttural appears by false analogy in *γόος, γοάω*. The Latin *b* is abnormal, as in *bos*.

√*gṛ, gir* (to swallow)	*βορά, βι-βρώσκειν*	vorare.
gáus (cow)	*βοῦς, βῶς*	(bos).

Bos may be borrowed, like *taurus* and *ovis*, or may come from the Italian dialects, where *g* = *b*, as in Oscan *kúm-bened* = *convenit*. But cf. p. 187.

gárbha (child)	*βρέφος*	globus.

The dentalised form appears in Gk. *δελφίς, δέλφαξ*. The Aeol. *βέλφις* and Hesychian *δόλφος* (· *ἡ μήτρα*) are the result of confusion. In Latin from this root come *globus, glomus* (for *glob-mus*), and perhaps *ger*(*b*)*men* (for (*g*)*verbmen*) and *Galba*; cf. Suet. *Galb.* 3 *praepinguis visus quem Galbam Galli vocant*.

	βλέφαρον, βλέπω.	

Pindar (*Pyth*. 9. 43) has *γλέφαρον*, which shows the guttural.

	βλήχων, Dor. *γλήχων* in Theocr. 5. 56, etc.	
√*nij* (cleanse)	*χέρ-νιβ-α, νίπ-τω,*	
niktá	*νίπ-τρον*.	

But *νίζω* (for *νιγ̯ιο*) has the guttural.

rájas (darkness)	*ἔ-ρεβ-ος, ἐ-ρεμ-νός*	Goth. *riqis*.

Sk. *rájas* for **ragas* with *j* from oblique cases. *ἐρεμνός* is for *ἐρεβ-νος* as *ἀμνός* for *ἀβμος*, Lat. *agnus*, which is also an instance of g^*.

√*tarj* (to threaten)	*τάρβος*	torvus (torgu̯-os).

The noun *tárjas* is for **targas* as *rájas* above (*K. Z.* xxv. 161).

	φλίβω (Theocr. 15. 76) Att. *θλίβω*	fligo.

Cf. Goth. *bli-g-gv-an*, which is a nasalised stem.

	ἀμνός	agnus.
√*gāh* (plunge) *gáhatē*	*βαθύς*.	

βαθύς for *βn̥θύς*, cf. *βένθος*, which is by false analogy beside *βάθος*.

√*gal-* (to drop)	*βάλλω*, (*βl̥ιω*)	volare.
galana	*βάλανος*	glans.
ugrá (strong)	*ὕβρις*.	

The guttural may be seen in *ὑγιής*, cf. Sk. *ugrá* beside *ὀj-ijan*.

Before *e, i.* IV. Velar g^* appears in Greek as δ before the palatal vowels *e, i*.

√*gal*	*ζέλλειν* (Hesych.), *ἐσδέλλοντες* (Arcad.).	

We get the labial in *βολή*, *βάλλω*. *βάλλω* is itself a derived present. The primitive system would have been pres. *δέλλω* (nhg. *quellen*), perf. *βέβολα*, strong aor. *ἔβαλον* (*ἐβl̥lον*).

Sanskrit.	Greek.	Latin.
	ζέρεθρον (Arcad., Strabo. 389).	
	δέρεθρον (Tegeatic).	

Cf. *βάραθρον*. The Ionic *βέρεθρον* (Hdt. 7. 133) is contaminated.

gurú	ἐπιζαρέω (Eur. *Rhes.* 441 ; *Phoen.* 45).	

Cf. *βαρύς*, *gravis*; but the form is the result of contamination, as before *αρ* (r̥) we should have expected *β*.

	διφοῦρα.	

This is given by Hesychius as the same as *γέφυρα*. The Boeotian *βέφυρα* is also quoted (or *βλέφυρα*, Athen. 14. 622 A), *βουφόρας* in Hesychius is a case of popular etymology.

	ὀδελός (Dor. in Ar. *Ach.* 796).	

The labial appears in *ὀβολός*. *ὀβελός* is contaminated. If the *ο* is prothetic, we may compare *veru*.

gárbha (embryo)	δελφύς, ἀ-δελφός	Lat. vulva (vulba, and in MSS. often bulba), Havet. *Mém. Soc. Ling.* vi. 116.

Cf. *βρέφος*, and v. supra. The root meaning is 'hollow,' especially of the belly or womb.

	δέλεαρ.	

Cf. Aeol. *βλῆρ* (Alcaeus 122 Bergk).

In the group *βανά*, *βέομαι*, *βίος*, *ἐβάθη* (for *ἐγεννήθη*, Hesych.), *γυνή*, *δίαιτα*, *διερός*, *ζῇ* (*δι̯ᾱει*), if we can safely connect all these, we get the velar under every possible form, but with much contamination. The collocation is, however, more attractive than certain.

Where *ζ* represents *γι̯* it often goes back to a palatalisation of the velar before *ι̯*, as in—

μείζων for *μεγι̯ων*, *μέγας*, I.-E. *meg*-.
ὀλείζων for *ὀλεγι̯ων*, *ὀλίγ-ος*.
ῥέζω for *ῥεγι̯ω* beside *ἔρδω*, *ἔργον*, Sk. *rájyāmi*.

The Soft Palatal *ĝ* is Sk. *j*, Gk. *γ*, Lat. *g* before all vowels and consonants. The soft Palatal.

√*jñā* (to know)	γι-γνώ-σκω	gno-sco.

Some have connected *γέγονα* with metathesis of the nasal, in the sense of 'I am recognisable.'

Sanskrit.	Greek.	Latin.
jánu (knee)	γόνυ	genu.
jambh (snap)	γόμφος, γαμφαί.	
√*aj*- (to drive)	ἄγω	ago.
√*ṛj* (shine) *árjuna* (light)	ἄργυρος	argentum.
√*ṛj*, *raj* (to reach) Cf. ἀλέξω, ἀλκή.	ὀρέγω	rego.
√*marj* (to wipe)	ἀ-μέργω, ὀμόργνυμι, ἀμέλγω	mulgeo.
	γαϝίω, γαῦρος, ἀγαυός	gaudeo.
	γάλως	glos.
jaran (old man)	γέρων, γραῦς.	
√*juṣ* (enjoy), *juṣáte*	γεύω	gustus.

Possible confusion of palatals and velars.

This last instance suggests a difficulty. For though the Zend and Slavonic languages prove that the guttural of γεύω is a palatal, nevertheless the forms δευάσθαι, ζεύσασθαι in Hesychius show the same root with a dental, which should properly only be seen in the case of a velar. Similar cases of a dental alternating in Greek with a palatal guttural are δᾶ, δά-πεδον, Cyprian ζᾶ, ἐννοσί-δας (Pind. *Pyth*. 4. 33, 173) Δα-μάτηρ beside γᾶ, γαῖα, Cyprian ἀδνόν (Hesych.), Ἀρι-άδνη beside ἁγνόν, δύναμαι, Sk. *jānāmi*, γιγνώσκω (*K. Z.* xxv. 145–151). These forms seem to have originated in some confusion of the two guttural series. Johann Schmidt (*K. Z. l. c.*) supposes that there were originally four series of gutturals, the palatals and velars proper and the palatal affection of both series, and that in most languages the two series of palatals were reduced again to one, but that the instances quoted above are relics of the palatal affection of the palatal. This however is more symmetrical than convincing.

If δύναμαι and *jānámi* are to be connected, both will go back to an original *ĝn̥-na-mi*, the υ in δύναμαι answering to that in δίδυμος (*gi-ĝn̥-mos*, *gĕminus* for **gen-minus*) : cf. *lĭg-ula* beside *lingo*, *ăpis* beside ἐμπίς for the short vowel after the loss of the nasal. A connexion of meaning between δύναμαι and γιγνώσκω may be seen in instances like Π. 141 τὸ μὲν οὐ δύνατ' ἄλλος Ἀχαιῶν πάλλειν ἀλλά μιν οἶος ἐπίστατο πῆλαι Ἀχιλλεύς, and in the use of *δύναμαι* in mathematical expressions, e.g. *τριηκοσίαι ἀνδρῶν γενεαὶ δυνέαται* (are known as) *μύρια ἔτεα* (Hdt. ii. 142); cf. *δύναται τοῦτο τὸ ἔπος οἱ ἐξ ἀριστερῆς χειρὸς παριστάμενοι* (ib. 30) and *können* with *kennen*, '*ken*' with '*can*.'

Velars in Latin.

We may add a few remarks on the treatment of Indo-European *q* and *g* in Latin. The same rules will apply to *gh*.

1. Before consonants, *o* and *u* they appear as *c*, *g*, the labial element, if ever existing, having disappeared.

2. Before *a*, *i*, *e*, as *cu̯* (written *qu*), *gu̯*, keeping the labial element.

It is clear that in these cases the velar is indistinguishable from the palatal guttural followed by *u̯* (*k̂* + *u̯*) in *ecos*, *ecom*, *equi*, *eco*, *eque*.

But these laws are modified by the laws of sound combination, by which

(i) The soft *g* disappears in Latin at the beginning of a word before vowels, leaving the element *u̯*.

(ii) In the middle of a word *g* is lost after a vowel; after a nasal it appears as *gu*; near a liquid, as *b* (?).

The last two laws also apply to *gh*.

The following instances seem to bear out these laws:—

I. Velar *q*.

frequens beside farci̯o, far(c)si; cf. *φράσσω*.
laqueus „ pellac-s, illec-s, illic-i̯o.
liquere „ prolic-sus, elic-sus; cf. *λίπος*.
prope for *proque (v. p. 128), proc-simus.
quinque for *penque, quin(c)tus, Quinctius.
torquere beside tor(c)tus, torculum; cf. *τρέπω*.

Perhaps we may connect *trico*, *tricae*.

arquitenens beside arcus.
sterquilinium „ stercus.
laquear „ lacus.
Querquetulanus (Tac. *Ann.* 4. 65) beside quercus.
ac (for at-c) beside atque; cf. *τε*.
secundus, socius, assecla, sectari, beside sequor, sequax.

(Cf. *ἕπομαι*, *ἀοσσητήρ*, p. 129.)

nec-opinus, nec; cf. neque.
acula beside aqua; cf. Μεσσάπιοι, Ἀπίη γῆ (p. 130).

locutus beside loquor, loquax.

Cf. λάσκειν for *λακ-σκειν.

currere beside equiria (Ov. *Fast.* 2. 859; Paul. *Fest.* 81) for equiquiria. (Cf. πορεύειν?).
-lictus beside linquere; cf. λείπειν.
crocire, gloctorare beside querquedula.

Cf. κέρκος, κορκορυγή. The *g* in *gloctorare* is due to the liquid; cf. *gloria* beside κλέος (p. 132).

seco (sīca) beside coinquo (Paul. *Fest.* 65 for coin-squo).
insectio, insece beside inquam (for insquam).

Cf. ἐνισπεῖν, ἔννεπε, etc. p. 130.

coxi, cocus beside coquo.
oculus beside ὄψ, ὀφθαλμός, Boeot. ὀκταλλός.
incola, cultus, colo beside inquilinus, esquiliae.
jecur beside ἧπαρ.
vox, praeco (*prae-veco) beside ἔπος.
τέταρτος, π-ί-συρες beside quartus (*qtu̯r̥tós*, p. 129).
πατάσσω beside quatio.
σπαράσσω beside squarrosus (Paul. *Fest.* 328).
(λοβός beside siliqua?).

λοβός for *σλοπος?, the *i* in Latin *siliqua* being phonetic, and the σ in Greek being lost before λ; cf. ὀ-σλιθ-θανω (ὀλισθάνω), Lat. (*s*)*lubricus*, Eng. *slide*.

νήπιος, νηπύτιος beside nequam.
καρκαίρειν beside querquerus (Paul. *Fest.* 256).
κέντρον beside triquetrus.

Contus in this case is borrowed.

coc-sa beside conquinisco, conquexi.
κείρω, curtus beside quiris, Quirites (Ov. *Fast.* 2. 477).
ἄκαρον (Hesych.), ἀχλύς beside aquilo, aquila, aquilu̯s.
tri-lic-s beside liquis, ob-liquus.

Cf. λικριφίς, *limus* for *lic-mus*.

κύκλος : coluber.

Both for *ku̯eku̯l-*

ἔμ-παιος : quaero.
(σ)κοσκυλμάτια : quisquiliae.
iacio : ἰάπτειν.

ἰάπτειν for j̭i-j̭aku̯-τειν as ἰάλλειν for σι-σl̥-j̭ειν.

κῆτος : squatina.
ἤλεκτρον : arquatus.

Arquatus is usually connected with *arcus* in the sense of 'the colour of the rainbow,' but this is not satisfactory.

II. Velar *g*.

frui, fruniscor for *frugu̯i, *frugʷniscor; cf. fruges.
agnus : *ἀμνός* for **ἀβνος*.

Conceivably we may put here *avilla*, *avena*, for **aguilla*, etc.

glans : *βάλανος*.
globus : *βόλβος*.
gremium (for *grebmium) : *βρέφος*, etc. (p. 136).
gravis : *βαρύς*.
grāndis : *βλωθρός*.

Both for *gʷl̥-*, with different terminations.

mig-rare : *ἀμείβω*.
volare : *βάλλειν*.
-vorus : *-βορος*.
vivus : *βίος*, etc. (p. 135).

vivus for *gʷigʷos*. A.-S. *cwic*, Eng. *quick*.

venire : *βαίνειν*.
venter : *γαστήρ*.

Sk. *jaṭharas*, I.-E. *gʷt-ter*.

fivere (for figere in Cato, *Fest.* 92) : figo, *θιγ-γάνειν* (?).
(gesto : *βαστάζειν*).

This, however tempting, is doubtful, because of Latin *g*.

(severus, *σέβας*, *σοβέω*, *σεμνός* ?).
gurdus; cf. *βραδύς*.

Gurdus is however said to be Spanish by Quint. i. 5. 57.

stingu-ere beside stinctus, instigare, *στίγ-μα*.
langu-ere beside laxus.
tingu-ere beside tinctus, *τέγγειν*.
ungu-ere beside unctus.

Possibly compare *ἁβρός* for *ygʷ-rós*.

πρέσβυς, Cret. *πρεῖγυς* : priscus.

If no Greek or Latin *b* represents an Indo-European *b*, the following may show *g* becoming *b* medially near *r*:

τύρβη, turba (cf. turgeo?).
φορβή, herba, forbea.

The Aspirated Velar Guttural.

I. The unlabialised aspirated velar *gh* is in Sanskrit *h*, *gh*, in Greek χ, in Latin in the first instance *gh*.

I.-E. *ghostis*			hostis	Goth. *gasts*.
stei̯gh	Sk. *stighnote* (to mount)	στείχω.		
ghed		χανδάνω	prehendo, praeda.	
legh		λέχος.		
	çankhás (shell)	κόγχη	congius.	

II. The labialised velar *ghᵘ* is in Sanskrit *h*, *gh*; in Greek, θ before ι, ε, but φ before ο, τ, θ, ς, liquids and nasals, elsewhere χ: in Latin *ghu̯*, which becomes initially *f*, medially *gu* after a nasal, *v* between vowels, *b* in connexion with *r*.

gharmá, *ghṛná* (warmth)	θερμός, θέρος	formus, furnus.
áhis (snake)		anguis.
I.-E. *snei̯ghᵘ*	νίφα	nivis, ninguit.
	νεφρός	nefrones, nebrundines.

Nebrundines is a Lanuvian, *nefrones* a Praenestine word; cf. *nefrendes* in Varro, *R. R.* 2. 4. 17, and Liv. Andr. *Frag*. 38 (Ribbeck).

hanti, *ghn-anti*	θείνω, φόνος	(-fendo?).

We may put here θνῄ-σκω, ἔθανον as a new formation for the regular *ἔφανον. Cf. φατός, ἔπε-φν-ον (cf. p. 223).

√*arh* (deserve) *árhati*, *arghā* (worth)	ἦλφον.	
	(σ)τέρφος	tergus.
raghú (small)	ἐλαχύς, ἐλαφρός, ἐλάσσων	levis.
I.-E. *ghᵘedh*	θέσσασθαι, πόθος (for *φοθος).	

	θήρ, Aeol. φήρ	ferus.

φηρσὶν ὀρεσκῴοισι A. 268; cf. Thessalian Φιλόφειρος.

	ὄνυχ-ος	unguis.
	ἀφρός, ἄχνη	agna (Paul. *Fest.* 211).

We may also put here *ἐ-θέλ-ω* beside *φαλίζει* (Hesych.), Sk. *har-*; *δάφνη* beside Thessalian *δαύχνα* (for *δαχϝια*); *αὐχήν*, Aeol. *αὔφην* (Ahr. I. 42), Goth. *agga*, pointing to an original **ἀμφων*, gen. **ἀγχενος*, with complete confusion of the consonants in inflexion.

More doubtful are—

καχάζω, καγχάς,	cachinnus beside	*καφάζειν* (Hesych.).
κωχεύω	beside	*κωφεύω* (Hesych.).
Sk. √*hṛṣ* (be excited)	horreo.	
ὄρνιχες (Theocr., Pind., Callim.)		*ὄρνιθες*.

The connection of *βένθ-ος*, *βάθ-ος* with *βάπ-τω*, *βαφ-ή*, Sk. *gắhatē*, is doubtful.

Palatal Aspirate.

II. The palatal aspirate *ĝh* is in Sk. *jh* (*h*), Gk. χ, Latin *h* (or *g* after *n*).

himá (cold)	χιών, χειμών, δύσχιμος	hiems, bimus (bi-himus).
√*vah* (to carry)	ὄχος	veho.
	χαμαί (χημαί)	humus, homo.

Homo = ὁ ἐπιχθόνιος. The older form is *hemo*; cf. *sēmo* = *se-hemo*, *nemo*, etc.

sáha (power, victory)	ἔχω, ἕξω, ἔ-σχ-ον.	
√*spṛh* (be eager)	σπέρχω.	
I.-E. *anĝh*	ἄγχι, ἆσσον.	
	χόρτος	hortus, cohors.
hári (golden yellow)	(χλόη?)	holus, helusa (Paul. *Fest.* 100).

folus is dialectic.

	χορδή	hariolus (haruspex).

fariolus is dialectic.

áhas (distress)	ἄγχω	ango.
√*mih*	ὀμιχέω	meio, mingo.

√*guh*, *gúhati* (he conceals), *κεύθει* (for **χευθει*), pointing perhaps to I.-E. *ĝheugh*.

The above are perhaps all the cases where the distinction between the palatal and velar aspirates can be said to be certain, and in many even of these authorities are divided.

The Aspirated Gutturals in Latin.

In Latin the treatment of the aspirated gutturals is very uncertain. The following rules are given as indicating the general law, but not with any idea of their being accurate or complete.

I. *ĝh* is in Latin *h* initially before vowels, medially between two vowels.

hi-ems, *bimus* (*bi-hĭmus*), χειμών, δύσχιμος, Sk. *himá ; humus*, *homo*, χαμαί.

We may possibly connect χθών, χθαμαλός (cf. *humilis*) for χιών, etc. *Humus* is a later formation from *hum-i* (*hm̥m-i*, cf. χαμ-αί), as the stem is properly consonantal.

holus, *helvus* (Paul. *Fest.* 99) beside χλόη, χλωρός, Sk. *hári*.

The stem *hel-* not yet altered to *hol-* is preserved in *helusa* (= *holera* Paul. *Fest.* 100) ; cf. *helvella* (Cic. *Fam.* 7. 26. 2), *helveolus*, *helvaceus* : *folus* is from the Italian dialects.

hira, *hillae*, χολή, χορδή, Sanskrit *hirā* (gut) ; cf. *hariolus* (dial. *fariolus*), *haruspex*.

hir, *hirudo*, χείρ (for χίρ-s), Sanskrit *har* (to take off).

hir = *hand*, Lucil. ap. Cic. *de Fin.* 2. 8. 63 (*her-us* ?).

(h)anser χήν.

aio, *adagium*, *nego*, ἦχανεν, ἠμί, ἦ : Sk. *āha* (he says).

ἠμί (ἦ δ᾽ ὅs), for *ἠχμί, *ἦχτ, *aio* for *āhi̯o*. The *g* in *adagium*, *nego* (*ne-agho*) is from the old pres. **agh-mi*.

lien σπλήν.

σπλήν for *σπληγχν, cf. σπλάγχνον, *lien* (for **lihen*) ; *splēn* is borrowed.

hi-o, *hi-sco*	χαίνω, χάσκω.	
veho, *via* (**vehi̯a*)	(Ϝ)όχος	Sk. *váhati* (he carries).

II. gh^w is in Latin before *r* initially *f*, medially *b*.

formus, furnus	θερμός	*gharmá*, *ghr̥ná*.
ferus, fera	θήρ.	
frio	χρίω.	
fremo, frendo	χρόμος, χρεμίζω.	
nefrones, nebrundines	νεφρός.	

The connection of *fundo*, *futilis* with χέω is doubtful. *Infimus* may be formed from **in fumō*, *in humo* with a medial *gh*^{w}, so possibly *fundo* from the compound forms (*infundo*).

III. *gh*^{w} medially after a nasal is *-gu-*, but in many cases the *-u-* disappears, and *gh*^{w} is indistinguishable from *ĝh*.

It is difficult to separate ἔγχελυς and *anguilla*, in spite of the vowel, and it is tempting to connect ἔχις, ἔχιδνα, and even ὄφις, ἄχος. ἄγχω seems to have a palatal aspirate, otherwise it might be put here.

Lingua is for *dingua*, Indo-European *dn̥gh*, *lingo*, *lĭgula*, Sanskrit √*lih* (p. 138).

Mingo beside *meio* has the palatal, which appears as *g* after *n*, between vowels as *h*. Cf. ὀμίχλη, μοιχός.

Ning(*u*)*it*, *ninguis*, νείφει, νίφα, *nivem*, Indo-European *sneiĝh*.

Especially to be noticed are *brevis* (*brehu̯is*, *brn̥gh*^{w}*-is*, Greek βραχύς), *levis* (*lehu̯is* *ln̥ghu̯is*, Greek ἐλαχύς), beside *pinguis* (**penguis*, *pn̥ĝhu̯is*, Greek παχύς), as showing the different treatment of *-n̥gh-* and *-n̥ĝh-* in Latin.

IV. *gh*^{w} medially between vowels is *v*.

red-uvia beside *unguis*, *ungula*, ὀνυχ-.

uva (for **ugu̯a*, **ongu̯a* ?), ὄμφαξ.

niv-em beside *ninguit*, *nix* (*snigh*^{w}*s*).

fluere, for **flovere*, **flevere*, **fleghu̯ere*, cf. *flov-ius*, *con-flug-es*, *confluxi*), φλέψ, (φλέφ-s ?).

It may be possible to connect παρθένος (for *φαρθενος) with *virgo* (Indo-European *ghr̥gh-*) with assimilation to *vir*, *virago*.

CHAPTER VII.

THE DENTAL, LABIAL, LIQUID, AND NASAL CONSONANTS.

The Hard Dental T.

THE hard dental *t* is unchanged in Greek and Latin.

τῠ́ (Doric), σῠ́	tū.

The *ŭ* is lengthened in Latin in a monosyllable ending in a vowel, the only exceptions to this law being the enclitics *-quĕ*, *-vĕ*, *-cĕ*, *-tĕ*, *-nĕ*.

τρεῖς, τρίτος	trēs, tertius.

Sk. *tráyas*, *tr̥tī́yas*: for *ri* becoming *er* in an unaccented syllable in Latin cf. p. 192. Sanskrit (*tr̥tī́ya*) and German (Eng. *thir-d*) both show that the historic accent in Latin and Greek must have been τριτός, *tertíus*.

τό, τῆμος, τώς, etc.	to-t, to-tus, tum, tam, is-te, etc.
τέρμων, τέρμα, τέλος	terminus.
τατός, τείνω, ταναός	tendo, tenuis.
τύμβος	tumere, tumulus.
τέρσεσθαι	torreo, terra.

Torreo = *tr̥s-ei̯-o* (cf. *to(r)s-tus*), *terra* = *ters-a*, cf. *te(r)s-qua* with I.-E. termination *-qo*, as in Gk. ποδα-πός.

τείρω	tero, trīcae.
τάλας, τλᾱ-τός, τάλαντον	(t)lātus, tuli, tollo, tolerare.
τρύω	trudo.
τε-ταγ-ών	tago, tango.
τέγγω	tingo.
τρέμω	tremo.
τρέ(σ)ω	terreo (ters-eo ?).
τύρβη	turba.
τάρβος	torvus.

Indo-European *tr̥gos*.

ταῦρος	taurus (borrowed ?).
τήκειν, τᾰκείς	tābes.

ἀντί	ante.
ἔτος, ἐτήσιος	vetus, veterinus.
ἰταλός (Hesych.)	vitulus.

Italia is usually connected, but the absence of *v* makes this doubtful; but cf. Osc. *Viteliú*, *Vitellius*.

πέτομαι, πί-πτω, πτερόν	peto, penna.

πτερόν for **πέτ-ρον*, Ang.-Sax. *fether*; *penna* (*pesna*, *Fest.* 205, 209) = *petsna*.

φράτηρ	frater.
ἑ-κατ-όν	centum.
κάρταλον (Hesych.), basket	crātes.

κάρταλον, Eng. *hurdle* = *k̑r̥t*, *crātes* = *kr̥̄t* (*Z. G. d. P.* 178).

πατήρ	pater.
ἄττα (γεραιέ) Epic.	atta (Paul. *Fest.* 12).
-τός (past part.)	-tus.

But -τλ- in Greek becomes *-cl-* in Latin (cf. *sclis* : *stlis*), in ἀντλᾶν : *anclare*, and Greek -τρον (κέν-τρον) is often Latin *-crum* (*simula-crum*) or *-c(u)lum* (*baculum* : βάκτρον). But cf. *aratrum* : ἄροτρον.

Soft Dental D.

The soft dental *d* is unaltered in Greek and Latin.

δέκα	decem.
δίδωμι, δῶρον	dono, donum.

The reduced root is seen in *dăre*, *dătus*, *δα-νείζω*, *δοτός* (p. 236).

δῖϝος	divus.

Reduced root in *δϝ-ήν*, *δοάν*, *diu*.

δάκρυ	dacruma (Paul. *Fest.* 68).
δαμάω, ἀδάμας	domare.

Reduced root in *Ἀ-δμη-τος* (*δμ̥̄*), *δμ-ώς*. The Ablaut *α* : *ο* between the two languages is noticeable.

δείκνυμι, δίκη	dīco, indĭco, dicis (causa).
ἀνδάνω, εὔαδε, ἀδύς	suadeo, suā(d)vis.
δαπάνη	damnum, dapes.

Damnum = *dap-num*, as *somnus* = *sop-nus* (*sop-or*). We can hardly connect *δέπας* because of the vowel.

δαρθάνω (δr̥-)	dormio.
δασύς, δαυλός, Δαυλίς	densus.

οἰκόν-δε	en-do, in-du-perator.
δέμω, δέμας, δόμος	domus.
δόλος	dolus.
δεξιός	dexter.
ἕδος, ἵζω (σι-σδ-ω)	sedeo, sēdes.
ἕδω	edo, esca (ed-sca).
ἰδεῖν	videre.
ἱδρώς	sudor (for su̯ei̯dor).
μέδομαι, μέδιμνος	modius, modus.

Meditari **more probably connected with** ***μελετᾶν.***

ὀδμή, ὄζειν	odor, olere.
ὀ-δούς	(dens) p. 307.
οἶδμα, Οἰδί-πους	aemidus (Paul. *Fest.* 24).

aemidus **for ****aedmidus,*** **but the vowel is a difficulty; some connect it with** ***αἷμα,*** **where the aspirate is obscure.**

πέδον, δά-πεδον	oppidum, oppido.
σχίζω	sci-n-do, sci-cĭd-i, scĭd-i.
ὕδωρ, ὕδρα	unda.

ὕδωρ **for ****σϝεδωρ,*** ***unda*** **for** ***udna,*** **cf.** ***Ἁλοσ-ύδνη.***

πέδη	impedire, compes, pedica.
καρδία	cor, crēdo.
χανδάνω	prehendo, praeda.
Πολυ-δεύκης, *ἀδευκής,* *ἐνδυκέως*	dūco, dŭcis.

ἀ-δευκής **(= not attractive),** ***δαιδύσσεσθαι· ἕλκεσθαι*** **Hesych.**

δοκέω, διδάσκω	disco, decet.

διδάσκω, **for** ***δι-δκ-σκω*** **(?),** ***disco*** **for** ***di-dc-sco.***

δηλέομαι	dēlere.

Dental Aspirate DH.

The dental aspirate *dh* is in Greek *θ*. Latin, having no aspirates, represents it initially by *f*, medially by *d*, or in the neighbourhood of *r* by *b*.

θερμός, θάλπω, θέρος	formus (Paul. *Fest.* 83).

Cf. ***Formiae, fornax, formus, ferveo.*** **But in this root a velar guttural rather than a dental is original (cf. p. 142).**

τί-θημι, θε-τός	facio.

Facio **represents the reduced root with** ***svarabhakti*** **vowel; cf.** ***θή-κ-η.***

θῆλυς, θηλᾶν, τιθήνη	femina, felare.

τιτθή, τηθίς, θεῖος, τηθή	feles, felix, femur.
θύω, θυμός	fumus, suffire.

Suffire for *-fuire*; cf. *fio* for *fu̯io*.

θιγγάνειν	fingere.
θύρα	fores.

Fores for **fures* as *folium* beside φύλλον.

θύρσος	fu(r)stis.
θραύειν	frustum, fraus, frustra.
θαρσεῖν	fa(r)stus.
θήρ	fera.
θρᾶνος, θρῆνυς	frētus, frēnum.
θαιμός ·οἰκία Hesych.	familia, famulus.
αἴθω	aedes, aestus, aestas.
γήθειν, ἀγανός	gaudeo, gavisus.
ἠίθεος	viduus.
ἔνθα	inde (p. 62).
ἐ-λεύθερος	liber for *leuber.

loeber is found (Paul. *Fest.* 121).

ἐ-ρυθρός	ruber.

Rufus, cf. *robus*, may be from the Italian dialects; *rutilus* is for **rud-tilus*.

οὖθαρ	uber.
ἔθος (σϝεθος), ἦθος	sodalis, suesco, (soleo?).

Sodes may be a voc. from this root.

ἀθήρ, ἀθάρα	ador, adorea.

In terminations:

-θρο- (πτολίε-θρον)	-bro (vela-brum).
-θλο- (θέμε-θλον)	-blo-, bulo- (sta-bulum).

ἄ-ϝεθλον cannot well be separated from *vad-is*, *praes* (**prae-vides*), in which case we shall have a vowel variation *a* : *e* between Greek and Latin.

In the following cases an original *d* becomes *l* or *r* in Latin:

Alternation of *d* and *l* in Latin.

δάκρυ	lacrima (cf. dacrima).
δαήρ	levir.
ἕδος	sedere, solium, consul (?).

Cf. *dingua* in the grammarians beside *lingua*. So *udus* and *uligo*, unless *udus* is for **ugdus* (ὑγ-ρός).

ad	ar-cesso, ar-biter, ar-fuerunt.

Cf. *apor* = *apud*. These are probably from Umbro-Samn. dialect (*Grundriss*, § 369. 1).

adeps	*ἄλειφαρ.*
odor	olere.
’Οδυσσεύς	Ulixes.

So *capitodium*, *impelimenta* (Paul. *Fest.* 108), *cadamitas*, *dautia* (for *lautia*, ib. 68, Corss. *Ausspr.* I. 81).

A Latin *d* = Indo-European *dh* may become *l* in

miles (mizdes)	*μισθός.*
mṓles, mŏléstus, (mogsdhes)	*μόχθος.*
malus (mazdus)	Eng. *mast.*

Hard Labial P.

The hard Labial *p* is unchanged in Greek and Latin:—

πατήρ	pater.
πέτομαι, πίπτω	peto.
πυός, πύθομαι	putris, putere.

πύ-θ-ομαι : *pu-t-ere* = *λα-θ-* : *la-t-ere.*

πυγών, πύξ, πυγμή, Πνύξ, πυκνός	pugil, pungo, pugna, pugnus.
πῦρ, πύϊρ	pru-na, prurire.
παύω, παῦρος	pau-cus, pauper.
πέδη	im-pedire.
ἐπί-πλ-οον, ἐπι-πο-λῆς	pellis.
πέλλα	pelvis.
πόσις, δεσ-πότης	potens, potis.
πελιός	pullus.
ἐ-πάγ-ην, πάχ-νη	paciscor, pa-n-go.

Cf. *pro-pag-o*, *pig-nus*, *pa(g)lus*, *pax*, from which last *paciscor* is probably derived, hence the *c*.

πωλέω, πάλλω, πάλλα	pello, palea.

For the Ablaut cf. *στρωφάω, στρέφω, ἐστράφην* (v. p. 249).

παλάμη	palma.
παραί	prae.
παρά	per, pro-per-us.

For connexion of meaning cf. *per-do*, etc. with *παρὰ τοὺς νόμους*. The following words among others may be classed with the same root, *περάω*, *πόρος*, *πείρω*, *πειράω*, *πέρνημι*, *πιπράσκω*, *πεῖραρ*, *portus*, *porta*, *pretium*, *interpres*, *paries*, *peritus*, etc.

πῖλος	pileus.
πίμπλημι, *πλῆθος*	plenus, plebes.
ἐ-πλάγχ-θην	plango.
πλέω, *πλύνω*	pluit.
πέπωκα, *πώνω* (Aeol.)	poculum, potus, posca.
πράσον	porrum.
πρέσβυς	priscus.

Cf. Cret. *πρεῖγυς*, *πρ-ίν*, *pr-ior* (p. 135).

The following show the loss of an initial consonant, especially *s*-. Compare p. 202.

πτέρνα, *πτυρέσθαι*	ex-sternare, con-sternare.

Indo-European *spter*; cf. *perna*, *pernix*.

πτύω	spuo.

Indo-European *spju*.

The following are instances of a medial *p* :—

σπάρτον, *σπυρίς*	sportula.
ὕπνος	somnus, sopor (p. 217).
ὑπέρ, *ὑπείρ*	super.

The aspirate in Greek and the *s* in Latin are now explained as the remnant of an original *ἐξ* (*ἐξ-υπέρ* = *συπέρ* = *ὑπέρ*, *super*). There is no aspirate in Sk. *upari*.

ἅπτω, *ἀφάω*	apiscor, aptus, amentum.

For aspirate in Greek, see p. 173: Indo-European √*abh*.

κάπρος	caper.
κλέπτειν	clepere.
ἁρπάζω, *ἅρπη*	rapio, sarpo.

Indo-European √*srap*, *sarp*.

ἔ-Ϝολπα	voluptas, volup.
ἔποψ	upupa.
ἑπτά	septem.

See p. 369.

ἕρπω	serpo.

Rēpo may be for *srēpo.*

λαμπρός	limpidus.
νέποδες	nepos.
ἔπορον, πεπρωμένη	pars, portio.

For Ablaut see p. 251.

πλείονες	plures.

Old Lat. *pleores* = *pleioses*, p. 97.

πηλός	pălus (?).
πήνη	pannus.
πίσσα	pix.
πῖσος	pisum.
πῖπος	pipilare.
πιδύω, πῖδαξ, πίτυς, πίνος	pīnus, pītuita.

These words are connected with a Sk. √*pi* (to swell), Curt. *G. E.* 276.

πεκτεῖν	pecto.
πατάνη, πίτνημι (πετάννυμι) *πίτνημι (= πι-πτνημι ?)*	patere, patina. patibulum.
πέδον	op-pidum.
πέπᾱμαι	patrare.
πρό	pro.
παθεῖν	patior.

But the relation is difficult, as *παθεῖν* beside *πένθος* must be for *πν̥θεῖν*. Hence Lat. *a* is unexplained.

πτοέω	paveo.
πέρκη	porcus.

Cf. Germ. *ferkel*, A.-S. *fearh*, Eng. *farrow*.

πλάγιος, Dor. *πλάγος*	plăga.
πλακοῦς	pla(c)nus, planca.
πλέκω	plecto.

Plico from the compounds *im-plico*, etc.

πλεύμων	pulmo.
πῶυ	papaver.

ποικίλος	pictus	Sk. √*piç* (adorn).
πένης, *πονηρός*, *πόνος*	penus.	

Pēnuria is rather to be connected with *σπάνις* with the *ĕ* degree of Ablaut, (p. 236).

The Hard Labial in Latin.

In the prepositions *ab*, *ob*, *sub* we have a Latin *b* answering to a Greek *π* in *ἀπό*, *ἐπί*, *ὑπό*. A final *p* is unknown in Latin, except in *volup* for *volupe*; a final *b* is only found in these three words.

The *p* of Sanskrit *ápa*, Greek *ἀπό*, is, according to Osthoff *Z. G. d. P.* 25) kept in Latin *po-lio*, *po-situs*, where *po-* is the reduced form of an original **apo*.

For the interchange of *p* and *b* between Greek and Latin, we may compare Ennius' *Burrus*, *Bruges* for Πυρρός, Φρύγες: so *buxum*, *πύξος*: *carbasus*, *κάρπασος*. So within the limits of Latin we find *publicus* beside *populus*, *Poplicola*, *Publicola*: *potus*, *bibo*, Sanskrit *píbāmi*, Greek *πίνω*: *scapula*, *scabellum*: *sapo*, *sebum*: *sapere*, *sibus* (Paul. *Fest.* 336).

On *coquo* for **quequo*, *quinque* for **penque*, *prope* for **proque*, see p. 128.

The Soft Labial B.

The soft labial *b* seems to have been almost unknown in the original language. It is very rare in Sanskrit; though common in Greek, it there originates mostly from *g*, *ϝ*, or *μ* before a liquid; uncommon in Latin, except as the representative of medial *dh* near *r*, medial *bh* or initial *du̯*.

It may be original in the following cases:—

μόλυβδος	plumbum.

Indo-European *mlombo-*, *μόλυβδος* = *m-ə-lm̥b-*.

ὀ-λιβρός	lubricus	√*slib-* Eng. *slip*.
τύρβη	turba.	
ἄβιν (Hesych.)	abies.	

In *labium*, Anglo-Saxon *lippe*, English *lip*, *labium* (for **lebium*) may owe its vowel to *lambo*.

λοβός		Cf. English *lop-eared*.
βάκτρον	baculum (?).	

But cf. p. 62.

βούβαλος, *βουβαλίς* (if not borrowed words)	bubulus, bubulcus.
βρόξαι (Hesych.)	brochus.
βριαρός	brutus (*broitus).

On *βοῦς*, bos, boare, see p. 136.

β is a merely euphonic insertion between *μ* and *λ* or *ρ* in:—

ἤμ-β-ροτον (cp. *ἀβροτάζω*=*μ̥-β-ροτάζω*) : *ἥμαρτον*.
μεσημ-β-ρία : *ἡμέρα*.
μέμ-β-λεται : *μεμέληται*.
ἄμ-β-ροτος : *βροτός*, dial. *μορτός*.
ἔμ-β-ραται (Hesych.) : *εἵμαρται*.
μέμ-β-λωκα : *ἔμολον*.
ἀμ-β-λύς : *ἀμαλός*.
ἀμ-β-λακίσκω, *ἀμ-β-λώσκω* : *μαλακός*.
γαμ-β-ρός for **γαμ-ρος*.
θύμ-β-ρα : *θυμός*.

Compare the corresponding insertion of *δ* after *ν* in *ἀν-δ-ρός*.

The following words, where *b* appears both in Greek and Latin, seem onomatopoeic:—

βάρβαρος : balbus.
βαμβαίνω, *βαμβάζω*, *βαμβαλύζω* : babulus.
βληχᾶν : balare, Anglo-Saxon *blǽtan*, *bleat*.
βαύβυκες : bubo, bufo.
βάτραχος, dial. *βρόταχος* : blaterare.

βάτραχος for **βρατραχος* as *δρύφακτος* for **δρυφρακτος*.

brachium, *buccina* may be borrowed from *βραχίων*, *βυκάνη*.

In the following words Greek *β* is Latin *f*, mostly in the neighbourhood of liquids; but *β* may represent an earlier *φ* (cf. *βλύω* : *φλύω*).

βλύω, *φλύω*, *φλέψ*, *φλύκταινα*	fluo.
βράσσω	fretum, fritillus.
βρύω	frutex, defrutum.

But *βρύω* may represent *gru*, and be connected with *con-gruo*, *in-gruo*.

βάσκανος	fascino, praefiscine.

βάσκιοι (Hesych.)	fascis, fascia.
βρέμω	fremo.

For Greek *β* representing *g* v. p. 135.

β represents:—

(1) An original *μ* before liquids in:—

βλίττω : *μέλι*.
βροτός : *μορτός*, *μέροπες*, mors.
βραδύς : mollis (ml̥dú-).
βλώσκω : *ἔμολον*.
βραβεύς : margo.

Indo-European *marg*.

(2) An original *ϝ* regularly in Aeolic. The connexion of *βλαστός* and Sanskrit *vṛddhá* is very doubtful.

A Latin *b*, where not original, represents:—

(1) initial *du̯* in:—

bellum : duellum.
bonus : duonus.
bis : *δύο*, *δίς*.
biplex : duplex.
bimus : dimus.

(2) *g* in:—

bos, *βοῦς*, Sanskrit *gāús*.
boere, *βοή*, *γόος*.

But *bos* may be from Italian dialects (p. 136) and *boere* may be an independent onomatopoeic word. On *baetere*, *ἀμφισβητεῖν*, v. p. 451.

The Aspirated Labial BH.

Indo-European *bh* has become in Greek the hard aspirated labial *φ*. Latin, having no aspirates, represents it initially by *f*, medially by *b*:—

φῦναι	fuisse.
πυθμήν	fundus.

πυθμήν by dissimilation for **φυθμην*; cf. Eng. *bottom*.

φράσσω	farcio.
φύλλον	folium.
πείθειν (**φειθειν*)	fido.

φηγός	fagus.
φέρω, φώρ	fero, fur.
φράτηρ	frater.
φαμί	fari.
ὀ-φρύς (Macedonian *ἀ-βροῦτες*)	frons.
φάος, φάκελος	fax, focus.
φυγεῖν	fugio.
φρύνη	furvus.
πενθερός (*φενθερος*)	of-fendix.
νέφος	nebula.
ὀμφαλός	umbilicus.
ὀρφανός	orbus.
νεφρός	nebrundines (p. 142).
ῥοφέω	sorbeo.
ἄμφω	ambo.
ἀμφί	ambi.
ἀλφός	albus.
γλύφω	glubo.
ἀφρός (Sk. *abhram*) *ὄμβρος* (?)	imber.

ἄφενος may be connected with *opes*, with Ablaut *a* : *o* (p. 250).

The Liquid L. The liquid *l*, where non-sonant, is unchanged in Greek and Latin, except so far as it alternates with *r*; and we need give only a few instances.

ἐ-λαχ-ύς	levis.

Indo-European *ln̥ghú*.

λείπειν	linquere.
λέων	leo.
λοξός	luxus, luxare.
λούω	lavo.
λύω	re-luo, so-lvo.

Solu̯o = *se-luo*, with *el* = *ol* (p. 190).

λύχνος	lucem.
λέγω	lego.

ἀλφαίνω, ὄλβος, λαβεῖν	labor (?).

The root may be *lab-*, with a metathesis of the liquid in *ἀλφ-αίνειν* : *ὄ-λβ-ος* may possibly represent the reduced root; cf. *ὄ-γ-μος*, p. 246.

ἐλαύνω has been connected with *alacer*, but more probably contains the root *u̯el-* of *ἑλίσσω*, *volvo*, etc.

óleum is borrowed from *ἔλαιον*, keeping the Greek accentuation (cf. *ancora* by *ἄγκῡρα*) but changing *el-* to *ol-*. On the other hand, *olīva* (beside *ólea*) keeps the Greek quantity *ἐλαία* (cf. *'Αχαιοί*, which gives *Achaei* or *Achivi*, *'Αργεῖος*, which gives *Argivus* or *Argeus*) (cp. p. 188).

γλυκύς : *dulcis* is doubtful, but a form *δεῦκος*, *δευκής* is quoted, so that the original may conceivably have been *dleu̯k̂*.

The Liquid R.

Indo-European *r* is unchanged, but often has a prothetic vowel in Greek (cp. p. 196). Few instances are required.

ἄρ-θρον, ἀραρίσκω, ἅρματα	ar-mus, ar-tus, ar-mentum.
ἀράχνη	aranea.
ἀρόω, ἄρουρα	aro, arvum, arena.
ἐρετμός	rēmus (rĕt-smus).

But this is an obscure group of words, for Greek regularly has a vowel before the liquid.

ἐρέβινθος	ervum.

With *β* = *Ϝ* (?).

ἐρωδιός	ardea.

***ἐ-r̥̄δ-ιος*, *r̥̄d-ea* (?).**

ἀπό-Ϝερσε	verrere.
ὄρ-νυμι	orior.
ὁράω, κηπ-οῦρος (κηπο-Ϝορος)	vereor.
ὀρρος	serum.
ἐ-ρεύγομαι, ὀ-ρυγμός	rugio.
ῥέπω	repente.
ἁρπάζω, ἅρπη	rapio, sarpo, sar(p)mentum.
σῦριγξ	susurrus.
ῥίζα, ῥάδιξ	rādix, radius.

Goth. *waurts*, Eng. *wort* = *u̯r̥d*, *rād-ix*, Eng. *root* = *u̯r̥̄d*.

The Nasal N. Indo-European *n* is unchanged in Greek and Latin, and requires but little illustration.

ἄνεμος	animus.
γένος	gena.
εἰνατέρες	janitrices.

Sk. *yā́tar*, Indo-European *i̯n̥̄ter*, so *εἰνατέρες = ἐ-i̯n̥τερ-ες*.

ἠ-νέχθην, ἐνεγκεῖν, *ποδη-νεκ-ής*	nanciscor (?).

ἐνεγκεῖν = ἐ-νε-νκ-εῖν, cf. *ἔ-τε-τμ-ον*. The vowel in Latin makes the comparison doubtful; *nac-tus* rather corresponds to A.-S. *geneah*, Germ. *ge-nug*, Eng. *e-nough*.

ἐνί, εἰν, ἐν	in, in-ter.
ἐννέα	novem.
νέος, νεοσσός *(νεϝοτi̯ος)*	novus, novicius.

Reduced root in *νῦ-ν*, *nu-n-c*.

ναῦς	navis.
ἕνος	senex, senium.
μένω	maneo.

Notice Ablaut *a* : *e*, but it is almost impossible to separate the two words.

μανία, μένος, *μέ-μν-ημαι*	Minerva, memini.
Μοῦσα (Μοντια)	mens, men-tior, moneo, Moneta.

mentiri may be connected with *μάτην* (*μn̥τ-*).

νόμος, νέμω	Numa, numerus.

Cf. *nehmen*, Engl. *nim-ble*.

νομός	nemus.
νεῦρον	nervus.
νῆμα	nemen (Inscr.).
νη-κερδής	nĕ-fas, ne.
νίφα	nivis.

Indo-European *snighʷ*, Eng. *snow*.

νεύω	nuo.
νυός	nurus.

Indo-European *snusó-*, Germ. *Schnur*.

νωί	nos.
οἴνη	oenus, unus.

The Nasal M.

Indo-European *m* is unchanged, but often appears with a prothetic vowel in Greek:

ἅμα	sim-ul, etc. (p. 172).

For *σm̥m-ă* (instrumental, p. 368), *sm̥-l̥*; cf. *μ-ῶνυξ*, *μ-όνος*, *μ-ία* (for *σμ-ία* cf. *εἷς* for *σεμ-s*).

ἀ-μάω	mĕto.

The exact relation of these words is very difficult. Can *mĕto* have been approximated to *mētior*? Fick quotes a form *ἀμέω*, but gives no authority.

ϝεμέω	vomo.
ἡμι-	semi-.
μαδάω	madeo.
μέμνημαι	memini.
ἀ-μαλός, *μαλακός*	mul-ceo, (mulier).
ἐ-μέ	me.
μειδιάω	mirari.
μέλι	mel.
μέριμνα, *μάρτυς*	me-mor.
μέσσος (*μεθ-ι̯ος*)	medius.
μήν	mensis.
μήτηρ	mater.
μίγ-νυμι	misceo (mig-sceo).
μορμύρω	murmur.
μυῖα (*μυσ-ι̯α*)	mus-ca.
μύλη	mola.
μῦς	mus.

CHAPTER VIII.

THE SPIRANTS.

Spirants.

SPIRANTS are sounds in the utterance of which the mouth channel is so far narrowed that the stream of breath sounds against the sides of the passage. They consist of

the surd dental spirant *s* and the sonant *z*;

the palatal spirant *j*, which is to be distinguished from the consonantal *i̯*.

the labial spirant *v*, in Greek Ϝ, which cannot be distinguished from the consonantal *u̯*.

The dental spirant S.

These hard and soft dental spirants have ordinarily but one symbol, σ, to represent them in Greek. This letter, however, though usually representing the hard spirant, as in ἐστί, before mediae and μ represents the soft spirant *z*, and as such is often replaced by the letter ζ, which is originally the symbol for the sound *di̯*-, e.g. in Ζεύς. Thus, in inscriptions of the 4th century, we get Πελαζγικόν, ψήφιζμα, Ζμυρναῖοι, πρεζβευτοῦ, κόζμος, κτίζμα, etc.

Rhotacism,

A special representative of the soft spirant is seen in the rhotacism of the Elean, Laconian, and Eretrian dialects. Thus we have the Elean τοῖρ, ὅρτιρ (ὅστις), πεπολιτευκώρ, the Laconian παλεόργα of Aristoph. *Lysistr.* 988, while Plato, *Cratyl.* 34 C adduces σκληρότηρ as Eretrian. This rhotacism occurs principally at the end of a word, though it is not unknown medially (v. supra and cf. μιργῶσαι (Hesych.) =μιzγῶσαι). It is not found at the beginning of a word, and at the end of a word it occurs mainly before a following vowel. The true explanation would seem to lie in a different dialectic pronunciation of the ρ; but it is natural to compare it with the change of *s* to *r* in Latin between vowels.

According to Collitz, *die Verwandtschaftsverhältnisse der griechischen*

Dialekte, p. 11, this rhotacism was originally peculiar to the dialect of Elis, and thence borrowed in the later Laconian. For instances cf. Cauer, *Delectus Inscriptionum Graecarum*, nos. 6, 7, 115, 116, 138.

Osthoff (*Z. G. d. P.* p. 26) supposes that *s* passed into ρ through *z*. Thus we have in an inscription ἄλλοιρ for ἄλλους = ἄλλους. The change of *ον-*, *αν-* before a sibilant into *οι-*, *αι-* takes place only at the end of a word under the same conditions under which there occurs a rhotacism of *s*. In *-ους*, *-αυς*, pronounced *-ονz*, *ανz*, the nasal was palatalised and developed a preceding ι̯ (cf. φθερ-ι̯ω, φθείρω). Thus *-ονz* passed to *-oinz*, and this to *-oiz* and *-οιρ*. Compare German (p. 261).

in Latin. In Latin *s* is hard at the beginning of a word and before hard mutes and after consonants; elsewhere it is soft, and between vowels and before *m*, *n*, *v*, *g*, it passes into *r*.

This last is the law of rhotacism in Latin. We may illustrate it by the following instances:—

gero : *gestus*. *funer-is* : *funes-tus*.
nefarius : *nefas*. *dir-imo* : *dis-tineo*.

The date of this change from *s* to *r* between vowels is fixed by Cic. *ad Fam.* 9. 21, who says that L. Papirius, cos. B.C. 336, was the first to change his name from Papisius to Papirius.

So we get—

ver-na : Ves-ta.
veter-nus : *Fέτεσ-* (*ἔτος*).
Car-mena, car-men, for Casmena, Fest. 205 (?).
fur-vus : fus-cus.
Miner-va : *μένεσ-* (*μένος*).
diur-nus : nudius (tertius).
hodier-nus : dies.

A final *s* never becomes *r* in Latin by phonetic law; *arbor*, *melior*, etc. are due to the analogy of the intervocalic *s* in the oblique cases, and *honos*, *lepos* are the common forms in Cicero[1].

This fact has an important bearing on the final *-r* of the passive, which cannot therefore come from the *-s* of the reflexive.

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[1] According to Madvig nouns derived from verbs never end in *-os*, but Quint. 1. 4. 13 gives *clamos*; v. Mayor *ad Cic. Phil.* 2. 6. 13.

Rhotacism has disappeared in the classical age of Latin, and consequently we get words of late formation in *-esius*, *-asius* with the spirant remaining.

The form *quirquir* of Varro, *L. L.* 7. 8 (= *quisquis*) may be a case of rhotacism in the sentence. It has been suggested that originally *quisquis* was used before a consonant, **quisquir* before a vowel, and that this last was assimilated to *quirquir* (*Mém. Soc. Ling.* vi. 50). So possibly *veter* for *vetes*, if it represents the Greek *ϝέτης*.

Medial S.

Medial hard *s* (I.-E. *s*) (*ks*, *gs*, written *ξ*, *x*).

ἐσ-τί	es-t.
ἐσ-θής	ves-tis.

The initial aspirate of the word (*ἑσ-* = *ϝεσ-*) has been lost before that of the succeeding syllable (cf. p. 174).

βαστάζειν	gesto (cf. gero) (?).

Indo-European *ges*, but we should have expected Lat. *vesto* (p. 141); cf. Eng. *cart*.

δεξιός	dex-ter.
λοξός	luxus.
κοσκυλμάτια	quisquiliae.

For *σκο-σκυλ-μάτια*, *squi-squiliae*; cf. *σκύλλω*, *σκύλαξ*.

μῆννος, Aeol. for **μηνσος*	mensis.
ἄορ (*η̥σ-ορ*)	ensis (?).
ἄξων	axis.
ἀξίνη	ascia (with metathesis of spirant, p. 200).
ἰξός	viscus.
αὔξ-ησις	aux-ilium.
ἐξ	ex.

Initial S.

Hard *s* at the beginning of a word is often dropped before hard mutes, nasals, and liquids. For a possible explanation see p. 203.

σκῦτος	scutum, obscurus.

Cf. *σκιά* (*σκει̯α*), Eng. *sky*.

σκάπτειν	scabies.
ἀ-στέρ-α	stella for *ster-la.
στατός	status.

στίζειν (στιγ̯ειν)	instĭgare, stĭ(g)lus, sti(g)mulus.
στῖφος	stipare, stipes.
στραγγός	strangulare.
στόνος	tonare.
πάτος	spatium.

If this is correct, it will account for *p* in A.-S. *pæth*, Eng. *path*. But *πάτος* is connected by Curtius with *pons* (*πn̥τος*), and *spatium* may be borrowed from Dor. *σπάδιον*, Attic *στάδιον* (so Curtius, *G. E.* 272, Bréal, *Mém. Soc. Ling.* vi. 3).

στρωτός, στρατός	stratus.
σπαρνός	parum.
σμερδνός	mordere.
σπένδω	spondeo.
σχίζω (σχιδ̯ω)	scindo.

Notice the aspiration in Greek after the spirant; cf. *σκέλος* : *σχελίς*, *σφυρίς* : *σπυρίς* (*sporta*), *σφόγγος* : *σπόγγος*, so perhaps *Βόσφορος* : *Βόσπορος*.

στλεγγίς	strigilis (borrowed).
σκᾶπτρον	scāpus.
(σ)μειδιάω	(s)mirare.

Cf. Eng. *smile*, *smirk*, and *φιλο-μμειδής* = **φιλο-σμειδης*. Cf. *μία* for *σ-μία* (p. 305).

Initial *s* before vowels becomes in Greek the hard breathing, in Latin remains *s*: S before vowels.

εὕδω	sūdum (?).
ἕδος	sedeo.
ἅρπη	sarpo.
ἑπτά	septem.
ἕξ	sex.

But here Indo-European may be *su̯ex*; cf. Welsh *chwech*, v. p. 369.

ἡγεῖσθαι	sāgire, praesāgus.
ἕρπω	serpo.
ἵεμεν (σι-σə-μεν)	serimus (si-să-mos) (p. 237).

ἵεμαι (to desire) in Homer began with a *ϝ* and is from a different root; cf. B. 154 *οἴκαδε ϝῑεμένων* (*ῑ̔εμαι*), Sk. *√vi* (enjoy).

ὗς (also σῦς)	sus.
ἕπεσθαι	sequi.
ἕνος (ἕνη καὶ νέα)	senex, senium, Sk. *sána*.
ἡμι-	sēmi-, Sk. *sāmi-*.

ὕραξ	sorex (v. p. 204).
ἅλλομαι	salio.
ἅλς	sal.
ἅ-μεναι (Φ. 70)	sătur, sătis.

The tense of *ἅμεναι* is doubtful; cf. *ἀ-δήσειαν* (α. 134). Greek has mostly lost the aspirate, but cf. *ἄδην*. Compare *ἀδηκότες*, *ἆσαι* (*ἀ-ε-σαι*).

ὅλος, *οὖλος* (Ion.)	sollus.
ἁ-πλοῦς, *ἅ-παξ*	sim-plex, sim-ul, sem-el.
ἕ-σπ-ετε (**σε-σπ-ετε*)	in-sec-e, inquam (p. 130).
αὐθ-έν-της, *ἁ-νύ-ω*	sons.

ἀνύω = *sn̥-nú-o* (Osth. *Z. G. d. P.* 479). Others connect *sons* with *prae-sens* p. 350.

ἑάω (*σεFαω*)	de-siv-are (= desinere, Paul. *Fest.* p. 72).

So *εἴων* = *ἐ-σεϝ-αον* (Meyer, *Gk. Gr.* § 477).

The retention of *σ* before vowels in Greek at the beginning of a word implies the loss of *F* after the spirant. In Latin also the second spirant is mostly lost; but where in Greek both *σ* and *F* are lost, in Latin we have *su̯*.

σαλεύω	salum	Eng. *swallow*.

Cf. *κονίσσαλος* = *κονι-σϝαλος*.

σειρά	sera.

But here there is no trace of *ϝ* in any cognate language.

σῦριγξ	susurrus	Sk. *sṿárāmi* (to sound).
(*σαίρειν*)	saltus	Eng. *sward*.
κασ-σύω	suo, sutor.	
But *ἁδύς*	suavis.	
ἦθος	suesco.	

σέβας is usually connected with *severus*, but Brugmann (*K. Z.* xxv. 302) compares Sk. √*tyaj-* (forsake), cf. *σοβέω*, *σεμνός* = **σεβνός* (cf. *ἀμνός*, *ἐρεμνός*, I.-E. *ag-*, *reg-*). For *ti̯* initial = *σ*, cf. *τῆτες*, *τήμερον* beside old Sk. pronominal root *tyá* (Whitney, *Sk. Gr.* § 499).

Medial *s* between vowels.

In Greek the spirant becomes the rough breathing and disappears; where it remains it is mostly the reduction of *σσ*.

In Latin it becomes *r*. Nearly all cases of *s* between vowels represent an earlier *ss* after a long vowel; e.g. Cicero wrote *caussa* (*Quint.* I. 7. 20). In *miser*, *caesius*, and some few other cases, the origin of the word is doubtful.

αὔως (Aeol.)	aurora.
νυός	nurus.
ἰός	virus.
οὔατα, ὦτα	auris.
μυός gen.	muris.
**γενεσος, γενεος, γένους*	generis.
μουσῶν (for **μουσασων*)	musarum.

Cf. Oscan gen. plur. in -*zum*.

In cases like *φάσις* *σ* represents an original *τ*: cf. *φάτις*. So
φασί = *φαντι*.
τύπτουσι = *τυπτοντι*.
τύπτουσα = *τυπτοντι̯α*.
διακόσιοι, cf. *διακάτιοι* (-*κη̥τιοι*).
εἴκοσι, cf. *ἴκατι* (*Fικη̥τι*).

The soft spirant *z*. The soft spirant *z* appeared originally before a following media or aspirated media.

Thus I.-E. *zg*, comes in *σβέννυμι*, if related to *seg-nis* (but see p. 451).

zd comes in Lesb. *παρ-ίσδω*, *ἵζω*, *sīdo*, I.-E. *si-zd-o*, reduplicated from √*sed* (p. 407); also in Lesb. *ὕσδος*, Att. *ὄζος*, Goth. *asts*, I.-E. *ozdos*; cf. I.-E. *nizdos*, Lat. *nīdus*, Eng. *nest*. *zd* also appears in *χαμᾶζε* which goes back to *χαμασδε*, and in *Διόζοτος* (*θεόσδοτος*).

I.-E. *mizdhos*, Goth. *mizdō*, *μισθός*, *mīles* (*mīzdhes*).

(*e*)*zdhí*, Zend. *zdī*, *ἴ-σθι*, with prothetic vowel (the imperat. of *εἰμί*).

e-zĝh-o-m (√*seĝh*), *ἔ-σχ-ον*.
-ez-bhi, *ὄρ-εσφι*, *στήθ-εσφι*.

The Digamma. It is possible to distinguish between the semivowel *i̯* and the spirant *j*, but it is not possible to make any distinction between the consonantal *u̯* and the digamma. The old grammarians represented the sound of the digamma by *ου*, which in the historical period of the Greek language can only be the graphic representation of a diphthong. Thus *Varro*, *Velia* are transliterated by *Οὐάρρων*, *Οὐελλία*, and the interjections *οὐά* (*οὐᾶ*), *οὐαί*, first appearing in the Alexandrian times, represent the Latin *vah*, *vae*. The same sound appears in Aesch. *Pers.* 115 as *ὀά*. But this *ου* (*ο*) was pronounced in the same or nearly in the same way as the labial semivowel *u̯*, and corresponds, according to Bentley's view, which is now almost universally adopted, to the English *w*.

Evidence for its existence.

The main authority for the existence of the digamma in Greek, apart from the evidence of the cognate languages, is of course the metre of the Homeric poems. After the disappearance of the sound there was a tendency to disguise its loss by the employment of alternative poetic words, and the insertion of various small particles to avoid hiatus. In spite of this, however, metrical irregularities remained which can only be explained by a restoration of the digamma (Monro, *H. G.* § 389).

Apart from the evidence of the Homeric poems, the proof of the existence of the digamma in any word rests upon its appearance in some dialectical form or in a cognate language.

Thus in Doric and Boeotian inscriptions we find *Ϝίκατι* *Ϝείκατι*, in Laconian *βείκατι*, which justify us in assuming an original *Ϝ* in the Attic (*Ϝ*)*εἴκοσι*. Similarly inscriptions give us *Ϝεσπαρίων*, *Ϝιδεῖν*, *Ϝοῖδα*, *Ϝίστορες*. In the famous Tables of *Heracleia* (end of fourth century, B.C.) we find *Ϝέτος*, *Ϝίδιος*, *Ϝέξ*, but side by side with these, *ἕκαστος*, *ἔργον*, without *Ϝ*.

Written evidence for the digamma is also to be found in the inscriptions of Achaia, Argos, Corinth, Corcyra, and Crete. The Boeotians retained the *Ϝ* even after the adoption of the Ionic alphabet (cf. Monro, *H. G.* § 406).

In Quintilian and Priscian it is called the *digamma Aeolicum*. The later Lesbian inscriptions, however, show no trace of the letter, and it does not seem to have been a living sound in the time of Alcaeus and Sappho, who replace it by *β*. As a sign it is vouched for by the old grammarians before initial vowels, e.g. *Ϝέθεν*, *Ϝοι*, *Ϝε*. In some cases it has passed into letters of a similar form, e.g. *τ* and *γ*. The poetess Balbilla of Hadrian's day wrote *γοι* and *γε* for *Ϝοι* and *Ϝε* in her epigram in the Lesbian dialect (cf. Meyer, *Gk. Gr.* § 233, Ahrens, I. 31). No trace of the digamma appears in the Ionic dialect of the mainland of Greece.

Its representation in the Greek dialects.

After the disappearance of ϝ as a written symbol, the Greeks could find no nearer sound to represent the consonantal u̯ than β, which had at the same time to do duty for the soft labial mute. The spirant and explosive sounds met in β and the spirant finally prevailed. For the hardening of u̯ to *b* we can find analogies in German, where O.H.G. *swalawa* becomes *Schwalbe*, and *farawa* becomes *Farbe* (Curt. *G. E.* p. 572).

Thus Laconian inscriptions give *βωρσέα*, *βίδεοι*, *βοικίαρ*: *βαδύ* is Elean for *ἀδύ* in Paus. 5. 3. 2. In Hesychius we have the following glosses:

βάγος· κλάσμα ἄρτου, etc., *Λάκωνες.*
βείκατι· εἴκοσι, Λάκωνες.
βισχύν· ἰσχύν, Λάκωνες.

Other instances are *βιδεῖν* (*ἰδεῖν*), *ἀβέλιον* (*ἥλιον*), *αἴβετος* (*ἀετός*), *βείρακες* (*ἱέρακες*), *ἄβληρα* (*ἡνία*), cf. Homeric *εὔληρα* (*ἐ-ϝληρα*).

In Lesbian initial *ϝρ-* is represented by *βρ-* in *βρόδον*, *βρήτωρ*, *βράκος*, and the same occurs in Laconia, Elis, and Crete.

A considerable number of Hesychian glosses show *γ* for *ϝ*, e.g. *γαδεῖν· χαρίσασθαι—γάδεσθαι· ἥδεσθαι—γανδάνειν* beside *ἡδύς*, √*su̯ad*—*γακτός· κλάσμα* (*ἄγνυμι*)—*γέαρ· ἔαρ* (*ver*)—*γέμματα· ἱμάτια—γατειλαί* (*volnus*)—*γίς· ἰσχύς* (*vis*)—*γοῖδα· οἶδα* (*video*)—*γήθια· ἤθη* (*su̯esco*)—*γόρτυξ· ὄρτυξ—γιτέα· ἰτέα* (*vitex*).

In some cases we seem to have *τ*, perhaps only owing to a confusion of Γ and T, or T and P.

τραγαλέον (broken)	*ϝρήγνυμι.*
τρέ (Cretan)	*σέ* (*tu̯e*).

To the disappearance of the *ϝ* was in all probability due the occurrence of *υ* in the interior of a word, where *ϝ* originally followed a vowel. Cf. *αὐέρυσαν* (*ἀϝέρυσαν*), *αὐίαχοι* (*ἀ-ϝιϝαχοι*).

Metrical value of the Digamma.

By this original semivowel u̯ Hartel explains the lengthening of the vowel in Homer in such cases as—

῎Ᾱιδος, ῎Ᾰιδος, for *Ἀυιδος, *ἈϜιδος (Υ. 336).
ᾱ̓είδῃ, ᾰ̓είδῃ for *ἀνειδῃ (P. 519).

φάεα, φάος for **φαύεα* (Π. 15).
ἄεσα, ἄεσα for **αὔεσα* (β. 490; γ. 151).
ἀπōέρσῃ (Φ. 283) for **ἀπουερσε*.

So *λείουσι* may be for **λε̄ουσι*, **λευουσι*, **λεϜουσι*.

Similarly the vowel *υ* represents an initial Ϝ in some Hesychian glosses, e.g.:—

ὕεσις· στολή (*Ϝέσις, Ϝεσ-θής*).
ὑάλη· σκώληξ, cf. *αἰόλαι εὖλαι*.

Perhaps the apparent *ᾱ* in *λίνου ἀλόντε πανάγρου* (E. 187) is to be explained by writing *λίνου ὑᾰλόντε* (*Ϝαλόντε*).

β for ϝ in Attic.

The belief that in Attic Greek *β* represents an original Ϝ rests on a comparison of *βούλομαι* with *volo*, but both may be explained as beginning with a velar guttural (cf. p. 141).

βρέχω is for **μρέχω*, not **Ϝρεχω*.
βράσσω is from √*bhrat*, Latin *fretum*.
βλαστάνω from √*bhradh*, A.-S. *braut*, high (not Sanskrit *vṛiddhi*, etc.).

Similarly Curtius' attempts to see an original Ϝ in *μ, ι, ο*, must be regarded with suspicion.

We may now pass to the general rules of the treatment of Ϝ (Monro, *H. G.* § 390).

Initial ϝ.

Initial Ϝ disappears in Greek, but is often represented by the aspirate. In Latin it is *v*. In Greek there is frequently a prothetic vowel:—

Ϝίκατι (Dor.)	viginti.
Ϝάγνυμι	vagus, cf. Engl. *wink* (?).
Ϝέριον, Ϝάρνα(*Ϝr̥-να*)	vellus (lāna = vl̥̄na ?) } Cf. *wool*.

Cf. *πολύρρηνν = πολυ-ϝρην*.

Ϝεσθής, Ϝέν-νυμι	vestis.

Cf. *ἑανός* (*ϝεσανος*), *ἀβρο-ϝείμων*, *ἱμάτιον* for *ϝεσμάτιον*, cf. *γέμματα* (supra). For *εσ* = *ῑ* cf. *χίλιοι* (Lesb. *χέλλιοι*), *ἵμερος* = *ἑ-σμερος* (De Sauss. p. 31).

Ϝέσπερος	vesper.
Ϝέαρ (*ἐ-Ϝr̥*)	vēr.

Another analysis makes *ἔαρ* = *ϝεσr̥*, Lat. **vezr*, **verr*, *vēr*, which accounts better for *ē* in Latin.

Ϝείκω	vices, vinco.	
Ϝοῖκος	vīcus.	
Ϝειλύω, Ϝελίσσω	volvo.	

εἰλύω = Ϝε-Ϝλ-ύω.

Ϝελπίς, ἔϜολπα	volup, voluptas.	

Cf. εἰλαπίνη = ἐ-Ϝl̥π-ινη.

Ϝέπος, Ϝόψ, εὐρύϜοπα	vox.	
Ϝιδεῖν, Ϝίστωρ, Ϝιστορία	video.	Cf. *wit.*
Ϝείρω, Ϝερέω	ver-bum.	Cf. *word.*
Ϝέτος (also ἔτος)	vetus.	

Cf. δωδεχ-ετης on an Inscription.

Ϝίς, Ϝῖνες	vis.	
Ϝοῖνος	vinum.	Cf. *wine.*
Ϝοράω	vereor.	Cf. *ward.*
ἐ-Ϝέργειν	vergo, urgeo (= *u̯orgeo ?*).	
Ϝίον	viola.	
Ϝάστυ, Ϝεστία	Vesta, verna.	Cf. Engl. *was*, Sanskrit *vástu.*
ἀλώπηξ (ἀ-Ϝl̥̄πηξ)	vulpes.	
ἀ-Ϝέξω, αὔξω, ὑγιής	vegeo, vigeo (augeo ?).	

ἀέξω, αὔξω, ὑγιής represent respectively three degrees of the root vocalization; cf. ἀλέξω, ἀλκή, *arceo.*

εὔληρα for ἐ-Ϝληρα αὔληρα for ἀ-Ϝληρα	lorum (for *u̯lorum*), lorica.	
Ϝελάνη, Ϝαλέα	Volcanus.	
Ἦλις, Ἆλις	vallis.	
ἧλος	vallus.	

Notice also ἐννοσίγαιος, εἰνοσίφυλλος for ἐν-Ϝοσι- root Ϝοθ- in Ϝωθέω, ἔϜωσα.

Medial Ϝ disappears in Greek or is represented by υ Medial Ϝ.

coalescing with another vowel into a diphthong; in Latin it is *v*.

Διϝί	Jovi (*Di̯eu̯í*), p. 347.
βοϝός,	bovis.
ἐν-νέϝα	novem.
νέϝος (cf. *νειός*)	novus.
λοϝ-	lavo (p. 86).
κοϝεῖν, ἀ-κού-ω	caveo.
κόϝιλος (Aeol.), *κόϝος*	cavus.
ἑϝός, τεϝός	Old Latin sovos, tovus, suus, tuus, (p. 88).
ἠ-ϝίθεϝος	viduus for vídou̯os (p. 187).

ϝ coalescing into a diphthong. The spirant has coalesced into a diphthong in:—

αὐέρυσαν for (*ἀνα*)-*ϝέρυσαν*, cf. *ἀπό-ϝερσε*.
αὐίαχοι for *ἀ-ϝι-ϝαχοι*, cf. *ἰαχή* (*ϝιϝαχη*).
ταλαύρινος for *ταλα-ϝρινος*, cf. *ϝρίον*.
καλαῦροψ for *καλα-ϝροψ*, cf. *ϝρόπαλον*.
εὔăδε for *ἐ-σϝαδε*, cf. *ἁδύς*, suāvis, suadeo.

Cf. Aeolic *αὐώς, δεύομαι, ναῦος*, etc.

Initial *su̯*. With initial *su̯* (*σϝ*) the *ϝ* is always lost in Greek, and sometimes *σ* too. In Latin we get sometimes *s*, sometimes *su*.

(*σϝ*)*ᾱδύς*, suavis, suadeo, cf. *sweet*. { Cf. savium beside suavium (p. 204).
ὕραξ for *σϝέραξ*, sorex.
ἶδος for *σϝειδος*, sūdor from *su̯eidor, *soidor.

So in Latin we have—

sordidus and suasum, English *swart*.
soror, Sanskrit *svásar*, German *Schwester*.
suesco, sodalis; cf. *ἔθος* (*σϝεθος*).

On the other hand the second spirant has completely disappeared both in Greek and Latin in—

σάλος	salum.	Cf. *swallow*.
σειρά	sera, sero.	
ἕ (*σϝε*)	se.	(Cf. p. 355 for this root.)
ἕξ, Doric *ϝέξ*	sex,	Welsh *chwech*.

Medial *v* between two vowels is often lost in Latin, as in *amasse* for *amavisse*.

The palatal spirant *j*.

The palatal spirant *j* can be distinguished from the semi-vowel *i̯* by the form it takes in Greek. An initial Indo-European *j* is in Greek represented by ζ, while an initial *i̯* becomes the spiritus asper, sometimes changed to spiritus lenis. In Latin both *i̯* and *j* become *j* (*i̯*), in Sanskrit both are *y*.

Compare, e.g.:—

ἧπαρ, jecur, Sanskrit *yákr̥t*, Indo-European *i̯ēqr̥(t)*.

εἰνατέρες, janitrices, Sanskrit *yátar*, Indo-European *i̯n̥ter-*, with—

ζυγόν, jugum, Sanskrit *yuga*, Indo-European *jug*.

ζύμη, ζέω, jus, Sanskrit *yuṣa*, Indo-European *jus*.

A medial *j* may occur in σεύω (√*qjeu*), σέβομαι (√*tjeg*, σεπτός = Sanskrit *tyaktás*, p. 164).

But the combination *di̯* is not distinguished in Greek from *j*; cf. dialectic forms κάρζα (καρδία), ζα (ζάπυρος, etc. = *διάπυρος), Ζόννυσος (Διόνυσος).

Thus *Di̯ēús*, Sanskrit *dyāúś* = Ζεύς, dialectic Δεύς, Cretan Τῆνα. Compare Latin *Mezentius* (**Medientius*, an Etruscan word), and the late *zaconus*, *zabolus* (*diaconus*, *diabolus*).

Spiritus Lenis and Asper.

The spiritus asper appears in Greek as the representative of a lost spirant *s*, Ϝ or *j*. But from the earliest times this representation by the rough breathing wavered, and in old Attic inscriptions we get ὁ, ἧς, ὅπως, ἕκαστος as well as the aspirated forms. The sign of the guttural spirant was, as we have seen, in the earliest times ⊟, but in the Ionic alphabet this symbol was given the value of an *e*-sound (p. 52). When the Ionic alphabet was adopted in Attica, the sign for *h* was dropped, and the spiritus asper accordingly no longer stood upon the same level as the other consonants. But we must not therefore conclude that the distinction between the rough and smooth breathing before vowels was lost. In the cities of Magna Graecia the sign Ͱ was still used to represent the rough breathing, and was thence adopted by the Alexandrian grammarians to represent a living sound in Greek speech. But the Ionians bear witness to a dialectic weakness of distinction between the two sounds, since they do not aspirate a preceding tenuis before an aspirated vowel in cases of elision, but write, e.g. *ἀπ' οὗ*, *κάτοδος*, etc. In the earliest times we have traces of the beginning of the loss of the aspirate sound in the so-called *ψίλωσις* of the Ionian and Lesbian dialects in contrast with the *δασύτης* of the Athenians. Homer, for instance, has *ἡδύς* but *ἦδος*, *οὖλος* but *ὅλος*. At a later date the tendency to deaspiration increased till it reached its completion in the language of modern Greece.

In the Indo-European language *h* is not to be regarded as a sound requiring a separate symbol, but only as a form of the introductory breathing.

In Greek it stood for:—

(1) An original *s* in—

ὁ, *ἁ*, Sanskrit *sá*.

ὁ-, *ἁ-*, *ἀ-*, Sanskrit *sá*, *sam* (*sm̥*).

The prefix *sm̥-* (together) appears as *ᾰ-* with a smooth breathing in *ἀ-δελφός*, *ἄ-λοχος*, less often as *ὀ-* in *ὄ-πατρος*, *ὄ-ζυξ*: as *ἁ-* with the rough breathing in *ἁ-πλοῦς*, *ἅ-παξ*, Latin *sim-plex*.

Compare *αὔω*, *αὕω*, *αὐστηρός*, Anglo-Saxon *seár*, English *scre*.

ἕ, *οὗ*, *οἷ*	(cf. *σφέ*)	suus, se.
ἱμάς	Sanskrit *sīmán*.	
ὕει	Sanskrit √*su*.	
ἕδος		sedeo.
ἅρπη		sarpo.
ἑπτά		septem.
ἕρπω		serpo.
ἕνος		senex.
ἡμι-		semi-.

(2) An original *F* in—

ἑκών	Sanskrit √*vaç*.	
ἧλος		vallus.

ἕννυμι	vestis.
ἕσπερος	vesper.
ἑστία	Vesta.

In other cases the *F* is represented before vowels by the spiritus lenis, e. g., *εἴκω*, *οἶκος*, *ἔργον* (p. 168).

(3) An original *i̯* in—

ὅς	Sanskrit *yás.*
ὑμήν	*syū́man.*
ὑσμίνη	*yudh.*
ἧπαρ	*yákṛt.*
ὑμεῖς	*yuṣmā́n.*

Before an initial *υ* the aspirate regularly appears, even where there was no initial consonant, e. g.—

ὕδωρ	Sanskrit *udán.*
ὑπό	Sanskrit *úpa.*
ὑπέρ	Sanskrit *upári.*
ὕστερος	Sanskrit *úttara.*

The rough breathing was eventually lost in these as in other cases.

Aspirates of secondary origin.

Sometimes the influence of analogy has led to the appearance of inorganic aspirates. Thus in the Heraclean Tables we find *ὁκτώ*, *ἑννέα*, etc., on the analogy of *ἑπτά*: *ἡμεῖς*, Doric *ἁμές*, as against Lesbian *ἄμμες*, are due to the analogy of *ὑμεῖς*, *ὑμές*.

ἧσται, Sanskrit *ā́ste*, is on the analogy of *ἕζομαι*, √*sed.*

ἁλκυών beside *alcedo* is due to a popular etymology from *ἅλς*. Thus Aristotle relates that the kingfisher builds its nest on the seashore. (Cf. '*A Year with the Birds*,' by an Oxford Tutor, p. 174.)

Again we have Attic *ἱερός*, but in the dialects *ἰαρός*, *ἐπίαρος*.

ἱέραξ is found beside the older *ἴρηξ*.

ἵππος, Sanskrit *áçva*, equus, but Ἰππομέδων, Λεύκ-ιππος.

ἡγεῖσθαι, but *ἄγω*, Ἀγησίλαος (?).

ἥλιος, Epic *ἠέλιος*. Cf. *ἀντ-ήλιος* (Aesch. *Ag.* 519, etc.).

ἅπτω, but *apere, aptus.

ἕως, but ἠώς, Doric ἀώς.

ἁνύω, later ἀνύω, Sanskrit *sanóti* (he wins). Cf. αὐθέν-της.

ἕξω, but ἔχω, though on inscriptions we find ἕχω, καθέχει.

Osthoff's theory of dissimilation.

An attempt has been made by Osthoff (*Z. G. d. P.* 478) to reduce this variation to some system. There is a law common to Sanskrit and Greek, known as Grassmann's law, which forbids a root to begin and end with an aspirate. Thus Indo-European √*bheu̯dh* is Sanskrit √*budh*, Greek √πυθ. Indo-European √*dhugh* is Sanskrit √*duh*, Greek √θυγ in θυγάτηρ. But where the final aspirate loses its aspiration the initial consonant in a few roots both in Greek and Sanskrit is aspirated (Whitney, *Sk. Gr.* § 155). Thus, Sanskrit √*budh*, deriv. *bu-bhut-sā*, Greek τρέφω, fut. θρέψω. By an extension of this law in Greek two aspirated consonants are not allowed in a single word; thus λυθη-θι (cf. ἴσ-θι) becomes λύθητι. Now in Greek we find αὔω, αὐαίνω, αὖος, αὐαλέος, as well as αὕσω, αὗσαι, αὑστηρός. So also ἔχω, ἴσχω, and ἕξω—ἔδεθλον, ἔδαφος and ἕδος, ἕδρα, ἕζομαι, ἵζω, ἱδρύω. The explanation of these variations is to be found, according to Osthoff, in the Greek law of the dissimilation of breathings. Even where σ between two vowels passed into an aspirate as a step towards its disappearance, this aspirate is to be regarded as a factor in the process of dissimilation. So then αὔhω is to αὕσω as ἔχω to ἕξω, and as τρέφω to θρέψω. But a desire for uniformity interfered with this relation, and so on the analogy of αὔω, αὖος we have αὕσω, αὗσαι, though, before this change was completed, the original αὕσω, αὗσαι were able to give rise to αὔω, αὖος.

The change of original intervocalic σ to *h* enables us to explain other apparently sporadic instances of the representation in Greek of an original σ. Thus we may explain ἶδος by the side of ἱδρώς by supposing an original inflexion *h*ϝῖδος (Indo-European *su̯id-*), gen. ϝιδε*h*ος, and similarly ἕδος, gen. ἑδε*h*ος. Not more than one aspirate being allowed in a single word, the initial aspirate of the genitive drops before the following intervocalic *h* originating from σ, and then the desire for uniformity leads to the adoption of the smooth breathing in the other cases as well. Then from ἶδος comes ἰδίω, from ἱδρώς, ἱδρόω.

Similarly we find in Homer ἄνεται (K. 251), ἄνοιτο beside the Attic ἀνύω which is vouched for by Herodian and appears in inscriptions. According to this rule we should have:—

ἅνομαι	ἅνεhαι	ἅνεται.

So too—

ἕπομαι	ἕπεhαι	ἕπεται.
ἕζομαι	ἕζεhαι	ἕζεται.

If ἵημι (*sero*) comes from an original *sísemi* (p. 399) the present should show the spiritus lenis, for *sisémi* = ἰσημι, ἰήμι, ἵημι: but the aspirate has been extended to the present from other forms such as ἥ-σω, εἶναι, (ἐ-Ϝεναι), ἧ-μα.

The prefix *sm̥* which appears with the rough breathing in ἅ-πας = *sm̥*-παντς, etc., appears with a smooth breathing before a following aspirate in ἄ-λοχος, ἀ-κόλουθος, ἀ-δελφός: and by analogy this unaspirated ἀ has been extended to words like ἄ-πεδος, ἀ-γάλαξ, ἀ-γάλακτος, where there is no following aspirate. This *a* has of course nothing to do with the *a privativum* (= *n̥*) in e.g. ἀ-θάνατος.

In some cases ἀ is irregularly aspirated before a following aspirate, e.g. ἁ-θρόος, beside ἀ-θρόος, ἀθροίζω. Compare ἁμόθεν, ἁμόθι (Indo-European *sm̥*), but ἀμοῦ (a genitive form = *sm̥mó-si̯o*, ἀμόhι̯ο, ἀμοῦ). ἁμῇ, ἁμῶς, ἁμοῖ, ἅμα are regular.

The enquiry into the alternation of the smooth and rough breathings is made more difficult by the ψίλωσις of certain dialects, such as the Lesbian and the Asiatic Ionic, the latter of which is represented in the poems of Homer and in the words borrowed thence for later poetic diction. ἦδος, for instance, in place of ἧδος (cf. ἡδύς, ἥδομαι) is almost purely poetic and Homeric, and is to be regarded as an Ionicism, like οὖλος, οὖρος, ἦμαρ beside Attic ὅλος, ὅρος, ἡμέρα. So too the ἀ representing Indo-European *sm̥* does not always obey the law in Homer; beside ἀ-δελφός, ἀ-θρόος, we have the irregular ἄ-κοιτις, ἀ-κοίτης, ἀ-τάλαντος, which are instances of

Ionic *ψίλωσις*, borrowed in the later poetic usage of epic and tragic writers. Other instances are Homeric *ἄμυδις*, *ἄμαξα*, but Attic *ἅμαξα*.

This explanation is only put forward by Osthoff as a tentative hypothesis, and, however ingenious, it must be admitted that it is hard to reconcile with the facts of early poetic diction. Its merit is that it provides an explanation for a variation in usage which otherwise appears to be purely sporadic.

H in Latin.

H in Latin is the regular representative of an Indo-European *gh*, *ĝh*, and perhaps *bh*, *dh* at the beginning of a word.

Medially between vowels it is commonly lost, and so we have *vemens* and *vehemens*; *nil* and *nihil*; *prendo*, *probeo*, *praebeo* and *prehendo*, *prohibeo*, etc. Compare too:—

meio for meihi̯o, Greek *ὀμιχεῖν*.
aio for ahi̯o, Greek *ἤχ-ανε*.
nivis for nihu̯is, Greek *νίφα*.
brevis for brehu̯is, Greek *βραχύς* (p. 109).

For *h* interchanging with *f* cf. p. 143.

Owing to the extreme instability of the sound, it is sometimes entirely lost, as in *anser*, which a comparison of Greek *χήν*, English *gander*, shows ought to be written **hanser*. It is very frequently dropped in inscriptions (Corssen, *Aussprache*, I. 52). Elsewhere it appears where there is no etymological ground for it, as in *haurio*, Greek *ἐξαῦσαι* (Hesych.), Old North. *ausa*. So *Hister*: Ἴστρος.

In Greek words:—

helops (Quint. 5. 10. 21) : ἔλοψ.
hebenum : ἔβενος.
hibiscus : ἴβισκος.

Similarly *arena* : *harena*; *edera* : *hedera*; *haruspex* : *aruspex* interchange with one another (Corss. l. c. 50).

In *aheneus*, the *h* is merely a device for avoiding the hiatus; such a device being common in the Italian dialects. *Aheneus*, *ahenus* is given as the correct spelling in Gell. 2. 3. He gives there instances of the tendency to aspirate irrationally in later Latin, e.g. *honus*, *honustus, lachrumas*, *sepulchrum.* Compare the well-known epigram in Catullus 84, and Quint. I. 5. 20; Cic. *Or*. 48. 160.

H has disappeared as a sound in the Romance languages and in Modern Greek.

CHAPTER IX.

COMBINATIONS OF SOUNDS.

Combinations of Sounds. HITHERTO we have contented ourselves with a comparison of the single sounds and their changes in the Greek and Latin languages.. It now remains to deal with the combinations of sounds in those languages. To some extent this subject has been touched upon in treating of Diphthongs. Diphthongs are composed of sounds originally distinct, which in course of time were uttered in a single emission of the breath. Some of them are original while others are the result of subsequent change in the interior of a word. With these phenomena we have already dealt, and can now proceed to other relations in which the different parts of a word or syllable can stand to one another.

Contraction. By contraction we understand the union of two separate sounds, vowel or sonant, which are immediate neighbours, into a sound pronounced in a single emission of the breath. The result is either a simple long vowel or else a diphthong. In the original language, as we gather from the example of Sanskrit, hiatus was not allowed where suffixes were added on to roots or word bases, but was avoided by the development of an intervening semivowel.

Thus Latin *patr-i-us*, Greek *πάτρ-ι-ος*, but Sanskrit *pítṛ-iya-s* and Indo-European *pətr-i̯os* and again Attic *ἱερός*, Corc. *ἰαρός*, Sanskrit *iṣ-ira-s*, Indo-European *is-r̥o-s*.

On the other hand though in such formations hiatus was not admissible, yet in composition it apparently existed in the Indo-European language as in the derived languages.

In Greek contraction very frequently arose from the disappearance of an intervening spirant or semivowel, e.g. φιλῶ from φιλέω from φιλε-ι̯-ω.

Παῖς, Homeric πάϊς from παϝις, has passed into a diphthong. In Homer we find proof that after the disappearance of the spirant the two vowels were for a time uttered with separate emissions of the breath. Thus in Homer κλειτός, κλείω, from the root √κλεϝ, may be scanned as trisyllabic. We have already (p. 81) given instances of diphthongs arising out of the disappearance of an intervocal spirant. In the different dialects contraction shows different degrees of completeness or incompleteness. In Pindar and Aeschylus we find τιμά-ορος: this in Attic is contracted τιμωρός. In the following instances we shall illustrate the rules of vowel combination, taking Attic as the standard, and adding the more striking deviations of other dialects from the Attic rule. For fuller details see G. Meyer (*Gk. Gr.* §§ 131–141).

Contraction in Greek.

Contraction of vowels of the same quality:—

$a+a$, whether a be long or short, become ā as in λᾶς, Epic λᾶας. By crasis we have τᾆθλα, τᾶλλα.

$\epsilon+\epsilon$ pass to η in Lesbian ἦχες, Doric ἀγῆται = Attic ἡγεῖται (Ar. *Lysist.* 1314). In Attic the contraction is to ει, e.g. φιλεῖ, σαφεῖς. In Homer there is often no contraction, e.g. ἀπονέεσθαι.

The Attic and Ionic ει which results from the contraction of εε is not to be regarded, any more than the ει which is the result of compensatory lengthening, as identical in sound with the genuine diphthong ει. In the same way neither the Attic and Ionic ου which results from contraction of οο nor the ου of compensatory lengthening is identical in sound with the genuine diphthong ου. The Attic ει of contraction or compensation (=close ē) was in old inscriptions represented by ε, as in ἐμι, ἐναι, κενο, for εἰμί, εἶναι, κεῖνο. And in the same way the ου of contraction and compensation (=close ō) is represented on old inscriptions by ο, as in δημο for δήμου. Early Doric represented the contraction of εε by η, of οο by ω, but at a later date like Attic by ει and ου.

$\epsilon+\eta$ become η, as in Ἡρακλῆς, but in Herodotus and often in

Homer εη is uncontracted, and so too sometimes with proper names in Attic.

η + ε become η: Homeric βασιλῆες, Attic βασιλῆς.

ο + ο become in Ionic and Attic ου (= ū). They remain uncontracted, e.g. in Homeric νόος, and in the genitives which are not found in our texts, Αἰόλοο, etc. (cf. Monro, *H. G.* § 98).

Doric has -ω in the gen. sing. of ο-stems, e.g. ἐφόρω, χωρίω, from the *Tables of Heraclea*. Later Doric had, like Ionic and Attic, -ου. In Lesbian and Boeotian we find ω.

Vowels of different quality.

Supposing there was a difference of quality between the two neighbouring vowels the contraction was either progressive as in Doric Ἀτρείδᾱ from Ἀτρείδαο, ἐλάττους from ἐλαττο(σ)ες, or regressive as in τῶν from τα(σ)ων, γένους from γενε(σ)ος.

α + ε remain in Herodotus uncontracted if they come together through the loss of an intervocalic spirant, e.g. ἀέκων, ἄεθλον. In Attic α + ε contract to ᾱ, e.g. φοιτᾶν, ὁρᾶν, etc.; ζῆν, πεινῆν, διψῆν, κμῆν, σμῆν, ψῆν are exceptions.

In Homer we sometimes find contraction, e.g. ὁρᾶται, but there is an assimilation peculiar to Homer, e.g. ἠγά-εσθε appears as ἠγάασθε, αἰτιά-εσθαι as αἰτιάασθαι. For the different forms which this Homeric assimilation takes in the contracted verbs in -αω cf. Monro (*H. G.* § 55).

In Doric α + ε contract into η, e.g. σιγῆν, ποτῆται, but on the other hand ἀέλιος becomes ἅλιος, Lesbian ἄλιος, where ᾱ has absorbed ε.

α + ο appear uncontracted in Homeric ἀγήρᾰος beside ἀγήρως. Instances of peculiar Homeric assimilation are ἡβώοντα (for ἡβά-οντα), γελώ-οντες, ἐμνώοντο. The Attic contraction is ω, e.g. τιμῶμεν, φῶς, etc. The Doric of Theocritus has contraction in ᾱ, e.g. γελᾶντι (1. 90).

ᾱ + ο. Homer has Ἀτρείδᾱο as well as ἐυμμελίω. The ηο which we should expect in Ionic and Attic appears as εω with a metathesis of quantity. In the poets εω is often scanned as one syllable by synizesis, and in Homer, where a vowel precedes, is actually written ω, e.g. Ἑρμείω. Instances of synizesis are the Πηληιάδεω Ἀχιλῆος of the first line of the Iliad, χρυσέῳ ἀνά (A. 15), πολλέων ἐκ πολίων (B. 131), etc.

In Doric, Lesbian, and Boeotian ᾱο is represented by ᾱ, as in the gen. sing. Ἀτρείδᾱ of the *Tables of Heraclea*, Ἰάνων (Aesch. *Pers.* 949), γᾱμέτρᾱς (for γαο-, Attic γεω-) *Tab. Heracl.* Theocritus has ἆς (29. 20) and τᾶς (30. 5) for Attic ἕως, τέως. Boeotian has Λᾱδάμας for Λᾱοδάμας, Attic Λεωδάμας. In Pindar we have synizesis in τιμάορος (*Ol.* 9. 84), and also in the words τετράορον, χρυσάορα, Λᾱομεδοντειᾶν.

ᾰ + ω become ω, e.g. τιμῶ, in all dialects, but the Homeric assimilation admits of ὁρόω, ἀντιόω, and also, with lengthening, of μενοινώω (cf. Monro, *H. G.* § 55).

ᾱ + ω in Doric become ᾱ, e.g. Ποσειδᾶν, θεᾶν (=θεαων). Homer has beside ᾱων, εων (from *ηων), e.g. πυλέων, θυρέων (φ. 191).

Homeric νηῶν, Doric νᾱῶν, becomes in Attic νεῶν. An original τεθνᾱώς, Homeric τεθνηώς is in Attic τεθνεώς. ἀώς, Homeric ἠώς, in Attic appears as ἕως, according to the rule by which long vowels were shortened before following vowels.

ε + ᾰ where contracted pass to η. Thus in the neuter plural of *s*-stems we find γένη, τείχη, εὐμενῆ, but where there is a foregoing ε, and generally where there is a foregoing ι or υ, εα becomes ᾱ, e.g. ἐνδεᾶ from ἐνδεής, Περικλέᾱ, ἀκλεᾶ, and also ὑγιᾶ from ὑγιής and εὐφυᾶ as well as ὑγιῆ, εὐφυῆ. Exceptions to this rule are to be found in χρυσᾶ, ὀστᾶ, where the α of the neuter plural is preserved.

η + ᾰ as in Epic βασιλῆα, contracted in Τυδῆ (Δ. 384), appear in Attic as -εᾱ, e.g. βασιλέᾱ, βασιλέᾱς. In Herodotus and the dramatists the α may remain short after ε, e.g. φονέᾰ (Eur. *Hec.* 882), Πενθέᾰ (*Bacch.* 1070). By crasis we have ἐπειδάν, ἁλήθεια, τυχἀγαθῇ.

ε + ο appear sometimes as ω in the Doric, e.g. ἐπαινῶμεν, ὠνώμενος, etc., in Attic and later Doric as ου, e.g. Θουκυδίδης. The Ionic contraction was ευ (p. 84), between which sound and εο there was a similarity in all dialects.

η + ο as in Homeric βασιλῆος become in Herodotus εο, βασιλέος, in Attic βασιλέως with transposition of quantity. In the tragedians this *εω* was often monosyllabic, e.g. in *πόλεως*, where the *ε* has practically become a semivowel. Original *εω* is contracted *ω* as in *φιλῶμεν* for *φιλέωμεν*.

ε + ω if contracted become *ω*, e.g. *φιλῶ* : they are uncontracted in Attic *νεῶν*, where an intervening spirant has fallen out, e.g. *νᾱϝῶν*, *νηῶν*, *νεῶν*.

ο + ᾰ as in Epic *χρόα*, *βόας*. Herodotus has *ἀμείνω*, but also *διπλόα*. In Attic we have *ἀκήκοα* beside *αἰδῶ*, *ἠῶ*. In *διπλᾶ* the ordinary *α* of the neuter ending is kept to mark the neuter plural. By crasis we have *ἁνήρ*, but *ὤριστος* (Λ. 288) and in Herodotus *ὡνήρ*. *προ-ατος* becomes in Doric *πρᾶτος*, Attic *πρῶτος*.

ω + ᾰ, e.g. *ἥρωᾰ*, *ἥρωᾰς*, Attic *ἥρω*, *ἥρως*. *σᾶ* from *σώᾱ* keeps the feminine ending of nom. sing. By crasis we have *ὠγαθέ*, *ὦναξ*.

ο + ε contracted *ου*, e.g. Epic *γουνοῦσθαι*, but *βόες* both in Homer and Attic. Elsewhere Attic contracts to *ου*, Doric to *ω*, e.g. *δουλῶται*, *ἐλάσσως* (Ar. *Lys*. 1260). By crasis *τοὖπος*, but also Attic *ἅτερος*, *θἄτερον*; but Attic *ἕτερος* is Doric *ἅτερος*, and this may be the form preserved in *ἅτερος*, *θἄτερον*.

ο + η become *ω*, e.g. Homeric *βώσαντι*, *ἐπιβώσομαι* and in Herodotus *ὀγδώκοντα*, *ἐννώσας*, *ἐβώθεον*, but not in Attic in these words. However from verbs in -*οω* Attic has *δηλῶτον* (=*δηλόητον*), etc.

Whenever *ι* or *υ* was the second element in a combination of which *α*, *ε* or *ο* was the first, a diphthong as already described (p. 78) was the result.

Wackernagel has ingeniously endeavoured (*K. Z.* xxix. 124) to connect the phenomena of contraction with the position of the accent. Thus where the accent rested on either of the two vowels as in *νέος*, *θεός* for *νέϝος*, *θεϝός*, there was no contraction; where the accent followed, as in *νουμηνία*, Θουκυδίδης, contraction ensued. There are many exceptions to this rule, especially in later Greek; but the earlier we go the more support it receives. In the combination of the stems *νεο-* and *μηνσ-* there is no new factor except the change of accent, and therefore to this we may refer the *ου* of *νουμηνία*. From *οὖς* we have in Attic the gen. *ὠτός*, but in Homer *οὔατος*. Attic has preserved the true accent, and *ὠτός* is for *οατός* from *ὀϝατός*. The nom. on inscriptions is written ΟΣ, Doric **ὦς* (cf. *ἀμφῶες* Theocr. 11. 32), for *ὄϝος*, gen. *ὀϝατός* (for *οὐατός*). Contraction does not occur where the accent precedes, as in *ἔπλεον*, *ἤθεος*, and *ἔνθεος* beside *ἐνθουσιᾶν*, nor does it occur where the second of the two vowels is long by nature or position as in *ἐωνούμην*, *ἑορτή*. In Aristophanes and the comic writers *πλέον* is the only case where the *ει* of *πλείων* changes to *ε*. In *πλέϊον* the chief accent was on *ε*, and *ι* disappeared, so *πλέον*, but in *πλείονος* the chief accent was on the *ι*.

Hiatus is occasionally to be found in new formations such as the Epic *στήομεν, δώομεν,* which we assume not to be original on the ground of the hiatus. Cf. p. 178.

In compounds we have Elision in *ἱππ'-αγωγός, ἀπ'-άγω, ἐμ'-αυτόν*: but on the other hand hiatus in *προ-άγω*. An explanation of the hiatus in *πολύανδρος, βωτιάνειρα, περίειμι* has been already suggested (p. 96).

Shortening of long vowels.

Long vowels were shortened in Greek before a following semivowel combined with a mute consonant:—

Indo-European *di̯ēús*,	Sanskrit *dyāú-s*,	Greek Ζεύς.
gōu̯-s	*gāú-s*	βοῦς.
plē }		πλεῖστος.
plēi̯s- }		Epic πλέες, πλέας.
-ōis	*áçvāis*	ἵπποις.
-ēnt	*vánt*	ἄημι, partic. stem ἀέντ-.

Other instances are *στόρ-νῡμι* for *στωρ-νυμι*, √*str̥̄-*, cf. *στρωτός*, —*βόλλομαι*, Lesbian for *βολνομαι*, from *βωλ-νομαι*, Attic *βούλομαι*, √*gl̥̄*—Attic *μηνός*, Lesbian *μῆννος*, from **μηνσος*, cf. Latin *mēnsis*, but in the nom. sing. beside *μήν* we have *μείς* (Pind. *Nem*. 5. 44) from *μενς* for *μηνς*.

Exceptions to this rule of shortening are to be found in later formations, e.g. *ῥᾷστος* for *ῥάιστος*.

The shortening of vowels before vowels has been mentioned in dealing with the different vowel combinations, e.g. Homeric *ἥροος* for *ἥρωος*, Herodotean *νέες, βασιλέος, ζόη* (= *ζωή*), and Attic *νεῶν*. We have also illustrated quantitative metathesis, as in *ἑστεῶτες* for *ἑστηϝότες*, *τεθνεῶτες* for *τεθνηϝότες*, *στέᾱτος* for *στηϝατος*, *βασιλέως* and *βασιλέα*.

Lengthening of short vowels.

The lengthening of short vowels is a common phenomenon in Greek. Thus where a double consonant is reduced to a single, a short vowel *α* is lengthened to *ᾱ*, or *η* in Attic and Ionic:—

Lesbian *στάλλᾱ*	Doric *στάλᾱ*	Attic *στήλη*.
(*ἀλλ-άλλων*)	Doric *ἀλλάλων*	Attic *ἀλλήλων*.
(*ϝαλλος*) *vallus*	Doric *ἆλος*	Attic *ἧλος*.

Lesbian ἄμμες	Doric ἀμές	ἡμεῖς.
Latin *pannus*		πήνη.

In Homer we find κᾱλός, Sanskrit *kalya*. The original Greek stem then was καλ-ι̯ο-, and the κᾱλός of Homer is a Doric form which should appear in Ionic as κηλός. In Attic the α is short and there has been no compensatory lengthening. In Homer we find ᾱ̓́νεται from ἀνϝεται and ῑ̔κᾰ́νω, κῑχᾰ́νω, φθᾰ́νω, where the length of the vowel points to a lengthening compensatory for the loss of a consonant. The compensatory lengthening of the ᾰ in πανσα to πᾶσα and in ταυς to τᾱς is older than the change from ᾱ to η in Attic and Ionic (cf. p. 18). Still in some instances we have η, e. g. in χηνός for χανσος, cf. Lat. (*h*)*anser*, δῆνος for δανσος, ἐτεκτήναμεν for ἐτεκτανσαμεν. The long vowel of the aorist of verbs in -αινω cannot be altogether reduced to rule, e.g. we have ἴσχνᾱνα beside ἐσήμηνα.

ε is lengthened to η, Attic ει, after the disappearance of a following nasal before σ, e. g.—

Doric ἦς (*Tab. Heracl.*). Attic εἶς for ἐνς.

The participial ending -εντς in Attic becomes -εις. The prep. εἰς is for ἐνς. The form ἐς was originally only used before consonants.

ε was lengthened to η (ει) where of two following nasals or liquids one disappeared. The double liquid or nasal remained in the Lesbian dialect, and was the result of previous assimilation. Thus:—

*ἐμενσα	Lesbian ἔμεννα		Attic ἔμεινα.
*μηνσος	Lesbian μῆννος		Attic μηνός.
*κτενι̯ω	Lesbian κτέννω		Attic κτείνω.
*φθερι̯ω	Lesbian φθέρρω		Attic φθείρω.
*χεσλιοι	Lesbian χέλλιοι	Doric χήλιοι	Ionic χείλιοι. Attic χίλιοι.

Other instances are εἵνεκα, Att. ἕνεκα, Lesb. ἕννεκα—φαεινός for φαεσνός, Lesb. φάεννος. In Homer the lengthening is not always consistent, e. g. ἐνοσίχθων but εἰνοσίγαιος, ξεῖνος as well as ξένιος, εἵνεκα and ἕνεκα. Sometimes the lengthening is irrational, as in εἰλάτινος.

The double nasal appears in the Attic ἀμφιέννυμι (Ion. εἴνυμι), κορέννυμι, κρεμάννυμι. The double liquid appears in Attic ὄρρος (ὄρσος), κόρρη (κόρση), etc.

ω (ου) arose—

(1) Where a nasal disappeared before ς in—

Cretan τόνς,	Boeotian τώς,	Attic τούς.
Cretan ὑπάρχονσαν,	ὑπαρχώσας (*Tab. Heracl.*)	Attic ὑπάρχουσα.
(μον-)	Boeotian μῶσα,	Attic μοῦσα.

(2) Where a double consonant which was the result of assimilation was reduced to one:—

γονϝ-	γονν-		Epic γουνός	Attic γόνατα.
κορϝα	κορρ-	Doric κώρα	Epic κούρη	Attic κόρη.
ὀλϝ-	ὀλλ-		Epic οὖλος	Attic ὅλος.
ὀρϝ-	ὀρρ-		Epic οὖρος	Attic ὅρος.
δορϝ-	δορρ-		Epic δουρός	Attic δορός.
βολν-	Lesbian βόλλεται			Attic βούλεται.
ὀρϝ-	Lesbian ὄρρανος	Doric ὠρανός		Attic οὐρανός.

Vowel combination in Latin.
Contraction.

The Latin diphthongs proper have been already treated of, p. 85. What follows is to some extent a repetition of what has been said there.

A. Contraction results in most cases from the loss of an intervocalic i̯. Thus *stō* is from *stā-i̯-o*, *trēs* from *trei̯es*, Sanskrit *tráyas*, *aes* from *ai̯es*, etc. So in inflexion *monēte* from *monei̯ete*, Sanskrit *mānáyata*, *amēs* from *amā-i̯ē-s* (cf. *cap-iē-s*).

But *eŏ*, *eă*, *io* remain uncontracted; *mone*(i̯)*o*, *mone*(i̯)*am*, *audi*(i̯)*o*. So also *aé* remains uncontracted where the second vowel carries the accent; cf. *aḗ*(*s*)*nus* by the side of *ǽris*, Sanskrit *áyasas*.

In some cases we get contraction after the loss of intervocalic *h*, *bīmus* for *bi-himus*, *nēmo* for *nehemo*, *via* for *vehia*.

Contraction by loss of intervocalic *v* occurs in *amaram* : *amaveram*, etc.

In composition a short vowel is elided before a long, e.g. *nullus* for *ne-ūllus*, *noenum* for *ne-oenum*. But a short vowel unaccented contracts with a preceding vowel, *copia* for *cóopia*, *dēgo* for *déago*; contrast *coăctus*, *coăgulum*. *Coagito*, *coalesco* are new formations (cf. *cōgito*).

Cæpi beside Lucretian *coēpi* owes its contraction to the accent of *coepísti*, *coeperámus*, etc. (*Z. G. d. P.* 158).

Shortening of long vowels.

B. *Shortening of long vowels.* This takes place before a semivowel, liquid, or nasal followed by a consonant, e. g. *năufragus* from *nāu̯-*, *clăudo* (cf. κληϝίς), *găudeo* (cf. *gāvisus*), *vĕntus* from *u̯ēntus* (cf. ἀ-ϝεντ-).

A long vowel before another is also regularly shortened in Latin, e.g. *nĕo* (for *nēi̯o*, cf. νή-θω), *rĕī*, *fidĕi*. In genitives of the 5th declension the *e* only remains long apparently when preceded by *i*, e. g. *dĭēī*. The quantity of these genitives in prose is doubtful; in poetry the short vowel or a contracted form tends to prevail. Compare also *illĭus*, etc. for *illīus*.

For cases like *lītera* by the side of *lĭttera*, see p. 206.

Lengthening of short vowels.

C. *Lengthening of short vowels.* All vowels were pronounced long in Latin before *ns*, *nf*, *gn*, *gm*, e.g. *cōnsul*, *īnfelix*, *dīgnus*, *āgmen*; cf. Cic. *Or.* 48. 159.

For cases of a long vowel in such combinations with a following consonant lost cf. p. 213.

Combination of Vowels and Semi-vowels.

We may now consider the relation borne by some of the Latin diphthongs to those of the original Indo-European language.

Indo-European *eu̯*.

Indo-European *eu̯* becomes in Latin *ou*, in—

εὐάζω : ovare. ἐννέϝα : novem.
νέϝος : novus. χεϝία : fovea.
ἐ-ρεύθ-ω : rōbigo, for roubigo. ἀ-μεύ-σασθαι, moveo.

So Old Latin *tovos* = τεϝός, *sovos* = ἑϝός. It is possible that *suus*, *tuus* are not variations of these, but represent an original double form, answering to the Greek ὅς, σός, the difference between the two being connected with the difference of sentence-accent (*Mém. Soc. Ling.* vi. 20, n.). τεός, ἑός, *tovos*, *sovos* are the orthotone, σός, ὅς, *tuus*, *suus* (cf. *tis*, *sos*, *sas*, *sis*, Fest. 301, Neue, ii. 189) the enclitic forms.

This *ọu* from an original *eu* remains unchanged before vowels in accented syllables; before consonants it becomes *ū*, e.g. *dūco* (cf. ἀ-δευκής), *nūper*, *nun-dinae*, *mūto* (beside *moveo*), *jūglans* (*Jov-is*), *jugera* (ζεύγε(σ)α), *Lūcius* (Λεύκιος). *Mōtare*, *nōnus*, must therefore be supposed to be later forms for older *mūtare*, **nūnus*.

In unaccented syllables the *ou* becomes *ŭ* before vowels in *dénŭo* (*novus*), *mónŭi* (*mone-u̯i*), *ábnuo* (*νεύω*). In this case *plŭo* (cf. *perplovere*), *ruo*, *fluo* (cf. *flovius*), as compared with πλέϝω, ῥέϝω, φλέϝω, must be supposed to owe their short vowel to the influence of the compound forms; cf. *ánnuo* : *νεύω*.

It follows, therefore, that *eu̯* in *brevis*, *levis* cannot be original; rather it goes back to *-n̥ghu-* in βραχύς, ἐ-λαχύς.

On the other hand, *ou* in Latin is always secondary, representing Indo-European *eu*, never Indo-European *ou*; *boves*, therefore, cannot directly represent βόϝες, but must be borrowed either from the Greek or from some Italian dialect. This is further confirmed by the fact that the initial *b* cannot be the direct Latin representative of the Indo-European velar guttural.

In the case of *ovis* there is some confusion. Indo-European *ou̯*, as we shall see, regularly becomes in Latin *au̯*. Therefore with ὄϝις we must put, not *ovis*, but *avilla* and *avena*. But the Latin *avis* corresponds to the Greek ἀϝι-ετός, so that as *avis* already existed in the sense of 'a bird,' we must suppose that *ovis* was used for the more correct *avis* for the sake of clearness in the sense of 'a sheep,' unless indeed *ovis* too, like *bos*, is borrowed. It is also conceivable that *ovis* instead of *avis* may be due to the analogy of *bovis*. But there is the same confusion between *au̯* and *ou̯* in Greek, as we get οἰωνός, ᾠόν, and perhaps οἶομαι (an augural term originally, cf. *autumo*=*av-tumo*) beside αἰετός, so the confusion may be Indo-European.

The *ou* of *bovis*, *ovis* becomes *ō* or *ū* before consonants in *bōbus*, *būbus*, *būbulcus*, *ōpilio*, *ūpilio* (cf. *mōtare* : *mūtare*).

Indo-European ou̯.

Indo-European *ŏu̯* is Latin *ău̯* in—

λούω,	lavo.	οἶομαι,	autumo.	κοέω,	caveo.
ὄις,	avilla.	οὖς,	auris.	πτοέω,	paveo.

This explains the much disputed *gravis* beside βαρύς. The original form was *g̥ru̯s*, which would regularly become in Latin **vorvis* as *g̥mi̯o* became *venio*. But *goru̯is* became by metathesis *grou̯is*, before the initial velar became *v*, and then was regularly changed to *gravis*, the g becoming *g* before a following consonant (p. 139). Latin *au̯* before a consonant became *ō*, e.g. *lomentum* (*lavo*), *lotus*, *oricilla* (*auris*). The *au* in *lautus*, *autumo*, etc., may be midway between *ou̯* and *ō*; *auspicor* is etymologically less correct, and due to assimilation with *avis*. So *cōda*, *ōsculum*, *cōtes* is the correct spelling. In *clāustrum* the *a* is perhaps long; cf. *clāvis*.

Other instances of Indo-European *ov* becoming Latin *av* are—

octāvus for **octōvus*, cf. Sanskrit *aṣṭāu* (a by-form with *aṣṭa*). In this case the *ōv* is long. (*K. Z.* xxviii. 154.)

faveo for **foveo*, the causative of √*bheu-*, *bhou-*, with the regular degree of the root; cf. '*di faveant ut*,' etc.

cavus beside *cohum* (i.e. *coüm*), κοϝίλος. The *u̯*, it would seem, is kept in inflexion before *a* and *i*, not before *o*, precisely as is the case in *ecus* beside *equa*, *equi*. Then the original inflexion would be *coüs*, gen. *cavi*, which produces on the one hand *cavus*, on the other hand *co*(*h*)*um*.

On the same principle we should get originally *Gnaeus*, gen. *Gnaivi*, which would account for the double form *Gnaivos* beside *Gnaeus*. So *Gaius*, but Oscan *Gaaviis*. And again a type *dei̯us*, *deivi* would produce (i) *deus*, (ii) *divus*. Perhaps we may explain in the same way the double form of the borrowed words *olea* : *oliva*—*Achaei* : *Achivi*—*musaeus* : *musivus*.

It is possible that the group *o* + consonant + *v* becomes *a* + consonant + *v*, the *ov* becoming *av* even when a consonant intervenes. This would explain *valvae* beside *volvo* (for **velvo*, ϝελύω); *salvus* beside ὅλος (ὀλϝος, cf. οὖλος).

Sollus may belong here. It is identical with *sōlus*, and the long *ō* may be explained perhaps by the loss of the following semivowel (*solu̯os*); cf. *āb-icio* for *ab-i̯icio*. (But for instances of double forms of words, one with long vowel followed by a single consonant, the other with short vowel and double consonant, see p. 208.) The old inflexion might be *sollus*, *salvi*, **sollo*, *salva*, etc., whence (i) *sollus*, (ii) *salvus*. From *salvi* come *salvere*, *salvare*, *salus*, *salve* (cf. οὖλε), from *sollus*, *sōlari* and perhaps *sŏlere*.

Sollemnis cannot be from *sollus* and *annus*, as this will not account for the *m*. The word would seem to be a participial form from **sollere*, perhaps originally **solle-mnios*, passing to the *I*- stems (cf. p. 293).

Another instance is *vocivus*, *vocatio*, *vocuus* beside *vacivus*, *vacuus* (*vanus* for *vac-nus* ?). The original root may be *vec-* in ϝεκ-ών; cf. *vacare negotio*.

In medial syllables *ŭ* represents an originally unaccented *eu̯* or *au̯* before a vowel, in e.g. *dénuo*, *ábnuo*, *mónui*, *áblui*.

So Havet ingeniously suggests that *patruus* may be for **pátravus*, comparing the derivation of *avunculus*, and *nepos*, which is 'nephew' as well as 'grandson.'

Before *i* followed by a vowel *ou*, *au* become *uu̯* in *diluvium*, *terripuvium*, *depuvio*.

ū represents an unaccented *au*, *eu*, *ou* before a consonant, e.g. in *cónclūdo* beside *claudo*, *áccūso*, *défrūdo*, *póllutus*.

Hence it follows that *foveo*, e.g. is from a root *feu-*, *favilla*, *favonius* from *fou-*, but *fōmes* may come from *feu* (as *mōmentum*) or *fou* (as *lōtus*). Another root *feu-* (*gheu-* ?) gives *fovea*; another root *fou-*, *favissa*. Finally, for *fraus* beside *frustra*, we may compare ῥόος beside ῥέω, if it is *frūstra* (for **freustra*), or ῥόος beside ῥυτός if *frŭstra*; again, χύσις : χοή corresponds to *fu-n-do*, *con-fŭ-tare* : *făvus*.

Indo-European *el*. The combination *u̯el* becomes *u̯ol* (*ol*, *ul*) except before *i* or a second *l*. The same may be true of *u̯em*, *u̯en*, and perhaps *u̯er*. Thus

volo, volt, volumus, but	velle, vellem, velis.
ulcus, vol-nus	ϝέλκος, vello.
voluptas	ϝελπίς.
colo (*quelo*)	in-quil-inus, es-quiliae. (Cf. stercus : sterquilinium.)
volvo	ϝελύω.
vomo	ϝεμέω.
urgeo	ἐ-ϝέργ-ειν. Sanskrit √*vrj* (twist).

Vergo is strictly a vulgarism; cf. *vertex* : *vortex* (?).

duonus, bonus	bene.

And generally *el* becomes Latin *ol* (*ul*), except under the conditions given above (except initial *cel*, *gel*, in *celer*, *gelu*, etc.).

soluo for se-luo.
sulva (sic) : ὕλη (σϝελϝη).
pullus : πελιός.
avunculus : O. H. G. eninchil.
scopulus : σκόπελος.
olea (borrowed) : ἐλαία.
catapulta (borrowed) : καταπέλτης.

But *u̯o* is again changed to *u̯e* in *vester* (*voster*), *vesci* (βόσκεσθαι), *verbum*, *verbera*, *vespa*, *vermis*, *verto* (*vorto*), *ve*(*s*)*num* (ὦνος = ϝοσνος), **veicus* (ϝοῖκος), **veinum* (ϝοῖνος), etc. (*Mém. Soc. Ling.* vi. 21.)

Vowel-change not due to Ablaut.

Further vowel changes not depending on any definite combination, nor any Ablaut of inflexion, but more vaguely due to neighbouring consonants and vowels, are as follows—

In accented syllables *u* becomes *i* in *silva*, *libet* (also *lubet*), but the *u* tends to be kept in such cases in accented syllables. Cf. *s-ŭ́-mus*, *tŭ́met* beside *máxĭmus*.

In syllables before the accent we get *ū* varying with *ō* in *ūpilio* and *ōpilio*. Cf. *mōtare* and *mūtare* (p. 89).

And *ŏ* varying with *ŭ*, *ŭ* with *ĭ* in *adoléscens* (said to be the participle) beside *adulescens* (substantive), *monuméntum* beside *moniméntum*.

In syllables after the accent, other than final, a short vowel appears as

(i) *e* before *r*, double consonants and single vowels, and after *i*, but elsewhere becomes *ĭ*.

leg-e-ris : leg-i-tur.
tálentum : τάλαντον (the Greek accent was here preserved or we should have talántum).
abi-e-tis, cav-e-a, pi-e-tas (cf. bon-i-tas).
pario, pepĕri but cado, cecĭdi.
cognomentum but nóminis.

But in many cases the analogy of kindred forms comes in, *Cáesăris*, *fúlgŭris*, *mémŏris*, *lévĭrum* (on analogy of *vírum*), *satura* (*satur*), *décoris* (*decŏs*).

(ii) *ŏ* (*u*) after *e*, *i*, *u̯* and before *l*.

parvolus, *alveolus*, *pessulus* (πάσσαλος), *paenula* (φαινόλη).

(iii) *u* passing into *i* (*ü*) before *b*, *p*, *f*, *m*.

gradubus (*gradibus*), *coluber*, *optumus* (*optimus*), *legimus* (cf. λέγ-ο-μεν), *pontufex* (*pontifex*).

(iv) Elsewhere a short vowel becomes *ĭ*, as in *gen-i-tus*, *machina* (μηχάνη); *juvenis* has *en* from *juventus*.

We may notice the variation of *ĕ* : *ĭ*, the former appearing before double, the latter before single consonants; *judex*, *judicis*, *genetrix*, *genitor*, etc.

In *veg-ĕ-tus*, *heb-ĕ-tis*, *seg-ĕ-tis* the analogy of the allied forms comes in.

Vowel change in composition.

In composition, the accent, roughly speaking, was originally on the first element, and the subsequent unaccented vowels are treated in accordance with the rules given above. Thus we have *áequipĕro*, *cónscendo*, *óccupo*, *cóntubernium*, *súbrupio* (in Plautus, becoming *subrüpio* and *surripio*), *éfficio*. Cf. *igitur*, the enclitic form of *agitur* (cf. p. 285).

But these laws are often crossed by the influence of the analogy of the uncompounded or cognate forms. The result of the combination of both influences may be stated thus—

ă becomes *ĕ* before two consonants and before *r*, but also often before one consonant, perhaps by analogy. Thus *depecisci*, *perpeti*, *defetigo*.

Before *ng* it becomes regularly *ĕ* and then, also regularly, *i*, e.g. *contingit*.

Before *b*, *p*, *f*, *m* it becomes *u* (*i*) in *contubernium*, *mancupis* (cf. *mancipium*), *condumno* (also *condemno*).

ā becomes *ē* in *subtēl*, *anhēlo*.

ĕ becomes *ĭ* (by rule), except before *r* or two consonants: *colligo* (but *confero*), *consentio*.

ē seems to become *ī* in *delīnimentum* (but Osthoff, *Z. G. d. P.* 115, note, connects *de-līnire* with *linum*, in the sense of a net, making the form *delēnire* a case of popular etymology).

In *fīlius* (θηλύς), *subtīlis* (*tēla*) we may perhaps get an instance of the 'balancing power of l' alluded to above, here operating even with long vowels.

ŏ becomes *ĭ* regularly in *íllico*, (*ín loco*), *ápica* (ἄποκος).

Indo-European *ri*. As a special instance of the effect of the presence or absence of accent on a syllable we may notice that *rī* unaccented regularly becomes in Latin *ĕr*. Thus *τρίβω*, *κρίνω* regularly would become in Latin **trīgo*, **crīno* (cf. *crīmen* : *κρῖμα*), but the participle *κριτός* would become *certus* and *τριπτός*, *tertus*; the compounds *ábs-trīgo*, *sé-crino* would become *ábstergo, sécerno*. Hence the simple verb by analogy became *cerno*, *tergo*. So we have **ácrĭ-bos* = *acerbus*, *ácrĭ-ssimus* = *acerrimus*; *alacrĭtas*, *acritas* are new forms for **alacertas*, **acertas*, as *facilitas* is younger than *facultas*. The same theory will explain *ter* (cf. *τρίς*) as originating in a phrase like *bís et ter*, with but one accent. To the former *ter* is due *quater* (for *quatur*). *Tertius* (*τρίτος*) may have had once the same accent that is still preserved in Sanskrit *tṛtī́ya*.

Consonantal Combinations.

Consonantal Combinations in Greek. Assimilation of Mutes. When a mute precedes a mute dental it is assimilated to the hard, soft, or aspirate character of that mute dental.

Thus *χτ*, *θτ*, *φτ* become *κτ*, *στ*, *πτ*.

Thus *ἔχ-ω* but *ἐκ-τός*—*πεύθ-ομαι* but *πυσ-τός*—*ῥοφ-έω* but *ῥοπ-τός*—*βρέχ-ω* but *βέβρεκ-ται*—*βαφ-ή* but *βαπ-τός*—*λέγ-ω* but *λέλεκ-ται*.

στ is found in place of *ττ*, *δτ*, *θτ*, and *σθ* for *δθ*, *θθ*, in *ἄπασ-τος* beside *πατ-έομαι*—*ἴσ-τε* beside *ἴδ-μεν*—*πέ-πεισται*, *ἐπείσ-θην* beside *πείθ-ω*—*ᾀσ-τέον* beside *ᾄδω*—*ἐψεύσθην*, *ἔψευσ-ται* beside *ψεύδ-ομαι*.

An assimilation of *τ* to following consonants is to be seen in the Homeric *κακκείοντες*, *κὰκ κόρυθα*, *κὰκ κεφαλήν*, *κὰγ γόνυ*, *κὰπ πέδιον*, *κάββαλεν*, *κὰδ δέ*, *καδδῦσαι*, *κάλλιπεν*, *κὰμ μέσσον*, *κὰρ ῥόον*, *κάσχεθε*, *κάκτανε*.

The following are instances of the assimilation of a preceding mute to a following aspirate:

ἐπλέχθην, √*πλεκ-*—*ἐτύφθην*, √*τυπ-*—*νύχθ' ὅλην*, (*νύκτα*)—*ἐφθήμερος*, (*ἑπτά*)—*ἐχθρός*—*καταχθόνιος*—*τετράφθαι*—*ἐλεγχθείς*—*ἐγράφθην*.

The assimilation in the foregoing instances is merely graphical, and represents no change of pronunciation.

Double aspirates in Greek.

Thus in *ἐγράφθην*, if *θ* has phonetically the value of *t + h*, i. e. the hard tenuis followed by the rough breathing, it is not easy to understand why *φ* of *γράφ-ω* should be altered to the tenuis before *τ* in *γραπ-τός*, while it remains before *t + h* in *ἐγράφ-θην*. Why not *ἐ-γράπ-θην* just as *γραπ-τός*, *ἐ-τύπ-θην* just as *τύπ-τω*?

Instead of *νύκθ' ὅλην* we have *νύχθ' ὅλην* written. But the fact that final *τ* is aspirated before the rough breathing should have no influence upon the preceding letter. Again, if both *χ* and *θ* are to have the value of a tenuis succeeded by a rough breathing (*-κhth-*), the combination *νυκhth ὅλην* would in a single emission of the breath be almost impossible to pronounce.

On inscriptions we find *ἐκθρῶν, ἄπθιτον, ἐλεγκθέντος, κατακθόνος*: and in Herodotus we have such combinations as *ἀπ' οὗ, ἐπεξῆς* in place of the Attic *ἀφ' οὗ, ἐφεξῆς*. Another argument against the supposition that both aspirates were pronounced in Greek is to be found in the repugnance the Greeks, in common with other members of the Indo-European family, had to the presence of more than one aspirate in a single word, as is shown in the dissimilation of *σωθηθι* to *σώθητι*, *ἐθεθην* to *ἐτέθην*, *φυθμην* to *πυθμήν*, *θριχος* to *τριχός*, etc. (cf. p. 200).

Tenues and aspirates are assimilated to Mediae before *δ*—

πλέκ-ω but *πλέγ-δην*—*κρύπ-τω* but *κρύβ-δην*—*κλοπ-ή* but *κλέβ-δην*—*γράφ-ω* but *ἐπιγράβ-δην*.

Combination of Mutes and Semivowels.

We pass on now to the combinations of mutes and semivowels.

Original Greek *-τι-* changes into *-σι-* unless there is a preceding *ς*, except in the Dorian and Boeotian dialects, e. g. *δίδω-σι, λέγουσι, πλούσιος, λύσις, βάσις, τίθησι, φησί, ἀμβρόσιος, πλησίος, διακόσιοι, ἀνεψιός, λέξις, πεῖσις, ἀφίησι, στάσις, θέσις*, etc.

The original *-τι* has been preserved after preceding *ς* in *ἔστι, πίστις, πύστις*.

Exceptions are μάρπτις, πόρτις, ἄρτι, μῆτις, ἄμπωτις, παμβῶτις, ἔτι, αἴτιος, ποτί, ἐγκυτί, βωτιάνειρα.

k*i̯ passes to σσ, Attic ττ, in πέσσω, πέττω, Lat. *coquo*.

ki̯ passes to σσ, Attic ττ, in ἥσσων (=ἡκ-ι̯ων), ἥττων beside ἥκ-ιστα. Other instances are Φοίνισσα beside Φοίνικες—Κίλισσα beside Κίλιξ—Θρᾷσσα beside Θρῄκη—πίσσα beside *pix*, cf. πεύκ-η—κολοσσός beside κολοκάνος—πτώσσω beside πτώξ—πτήσσω beside ἔπτακ-ον—λεύσσω beside λευκ-ός—φρίσσω beside φρίξ—ἀίσσω beside αἴξ—θωρήσσω beside θώρηξ—φυλάσσω beside φύλαξ—ὄσσε beside *oc-ulus*—ὄσσα beside *vox*.

χi̯ passes to σσ, Attic ττ, in γλῶσσα beside γλῶχες, γλωχίς—θάλασσα beside ταραχή—ψῆσσα beside ψήχω—βράσσων beside βραχύς—πάσσων beside παχύς—θράσσω beside τρᾱχ-ύς—πτύσσω beside πτύξ, πτύχες—βήσσω beside βήξ, gen. βηχός (Thuc. 2. 49). So also ὀρύσσω, μορύσσω, μειλίσσω.

γχi̯ passes to σσ, Attic ττ, in ἆσσον beside ἄγχι—ἐλάσσων (original ἐλεγχι̯ων). Cf. ἐλέγχιστος (B. 285), ἐλεγχέες (Δ. 242).

τi̯ passes to σσ, Attic ττ, e.g. ἄσσα for τι̯α=τινά after neuter plurals—i. e. ὁποῖά ττα was wrongly divided ὁποῖ' ἄττα, and then ἄττα came to be used as an independent word; so ἐκείνου 'νεκα gave rise to οὕνεκα by the side of ἕνεκα (*K. Z.* xxviii. 109). Cf. χαρίεσσα beside χαρίεντα—θῆσσα beside θῆτες—Κρῆσσα beside Κρήτη—μέλισσα beside μέλι, μέλιτος—πρόσσω beside προτί—and so also κρείσσων (Ionic κρέσσων), λίσσομαι, ἱμάσσω, πάσσομαι, ἐρέσσω.

θi̯ passes to σσ, Attic ττ, in κισσός, Sanskrit √*gadh*, Latin *hed-era*—μέσσος, Attic μέσος, Sanskrit *mádhya-s*, Latin *medius*—κορύσσω beside κόρυθες—βῆσσα, βυσσός beside βαθύς.

After consonants τi̯ passes to σ in παντι̯α, πάνσα (Cret.), πᾶσα—δοκτι̯α, δόξα—διπτι̯α, δίψα—λεγοντι̯α, λέγουσα—μυκτι̯α, μύξα.

These combinations are represented by σσ except in later Attic, and in the Boeotian dialect, which has ττ even where Attic has σ. Thus in Ar. *Acharn.* 884 we have Boeotian κήπιχάριτται for Attic ἐπιχάρισαι. And πρόσω, ὅσος, ὅποσος, which have in Attic only a single instead of a double σ, yet in

Boeotian are represented by ττ. Again, *κομισάμενος* for *κομιδσαμενος* is in Boeotian *κομιττάμενος*.

Original double σ as in *ἔπεσσι*, *ἔζεσσα* of Homer is in Attic represented by a single σ, e. g. *ἔπεσι*.

The σσ which represents κι̯, χι̯, τι̯ is prior to the representation by ττ. In Doric, Ionic, and Lesbian we find σσ (cf. Curt. *G. E.* p. 656). There are some forms in double σσ, later Attic ττ, which cannot come from the combination of an explosive with the semivowel. Thus *λύσσα*, *λυσσᾶν*, Attic *λυττῶσα* can be compared with Sanskrit √*ruṣ* (be vexed), where there is no sign of an original dental. Curtius also gives *κα-σσύειν* (to stitch) for *κα*(*τα*)-*σι̯ύειν*, in Attic *καττύειν*. For the apocope of the proposition we can compare the Homeric *κά-σχεθε* (Λ. 702). Double σσ was then prior to double ττ, but there must have been some similarity of utterance between σσ and ττ to induce this change. Thus *θαλάθθας* quoted from a Cretan inscription, 'Ατθίς appearing beside 'Αττική, and Πίτθος, Πιτθεύς of Attic inscriptions are all indications that the sound of σσ, ττ was not strictly represented by these letters, but that as the sound really had no peculiar symbol, it was represented variously. The nature of the sound was probably spirant. At the beginning of a word it was represented by single σ as in Epic *σεῦε* (= *ἔ-σσευε*).

πι̯ passes to πτ in *πτυ-*, *πτύ-ω* from *σπι̯ῡ-*, *spuo*. Others are given by Curtius, *G. E.* 497, but these we cannot prove. Common instances of πτ are *πτόλις*, *πτόλεμος*, Attic *πόλις*, *πόλεμος*, where Sanskrit shows no sign of *pi̯*.

g^{w}ι̯ passes to ζ in *νίζω* beside *νίπτω* for *νιγι̯ω*, pointing to an original velar *g*. So too in *ἅζομαι* beside *ἅγιος*.

δι̯ becomes ζ in Ζεύς, Sanskrit *diāús*, Latin *dies*—*ἀργυρόπεζα* beside *ποδός*—*θερίζω*, Boeotian *θερίδδω*—*φράζω* beside *ἐπέφραδον*—*χάλαζα*, Latin *grando*. Other instances are *σχίζα*, *ῥίζα*, *ὄζη*, *ἕζομαι*, *φράζω*, *χέζω*.

γι̯ becomes ζ in *μέζων*, Attic *μείζων* for *μέγι̯ων* (cf. *μέγ-ιστος*), *ὀλείζων* beside *ὀλίγος*—*μᾶζα* beside *μάγειρος*. Also *φύζα*, *ἅζομαι*, *πλάζω*, *ῥέζω*, *σφάζω*.

In the Lesbian dialect σδ stands for ζ in *ἀγοράσδειν*, *ἐρίσδειν*, *παίσδεις*, etc.

For combinations of u̯ with consonants cf. p. 170.

Combination of Dentals with μ.

The Dentals τ, δ, θ before μ, according to the rule as usually given, pass to σ, but this is not correct.

σ before μ everywhere disappears except in cases where it is preserved by false analogy. Where σ so disappears, a preceding short vowel is lengthened in compensation, e. g. *εἰμί*, *εἶμα*, *ἧμαι*, *ζῶμα*. In the pf. part. pass. σ has come in from the analogy of the 3rd sing. indicat., e. g. *τετελεσμένος*, *ἠμφιεσμένος*, *ᾐδεσμένος*, *διεσπασμένος*, *τεθλασμένος*, *βεβυσμένος*, *ἀνελκυσμένος*, *ἐφυσμένος*, *ἐζωσμένος*, *κεχωσμένος*, *σεσεισμένος*. The regular form without σ is kept in *γεγευμένος* (Eurip. *Hipp.* 663), *κεχριμένος* (Hdt. 4. 189), *ἀποκεκρουμένος* (Ar. *Ach.* 459), *εἰρυμένος* (N. 682), *εἶμαι* and *εἱμένος* (cf. Rutherford, *N. P.* p. 97). The σ which has arisen before μ out of τ, δ, θ in such forms as *πέπυσμαι*, *λελάσμεθα*, *λελασμένος*, *κεκάσμεθα*, *κεκασμένος*, *πεπάσμην*, is due to the analogy of the indicat. *πέπυσται*, etc. Dentals should regularly remain unaltered before μ, e. g. *ἐρετμός*, *οἶδμα*, *πυθμήν*, etc., and in the perfects *κεκορυθμένα*, *εἰλήλουθμεν*, *ἐπέπιθμεν*, *ἴδμεν* in Homer, and *πεφραδμένα* (Pind. *Ol.* 1. 27), *κεκαδμένον* (Sapph. 56 B.), *πεπυκαδμένον*. Where δμ-, τμ-, θμ- appear to pass to σμ, they really stand for δσμ, τσμ, θσμ, e. g. *πεῖσμα* for *πενθ-σμα*, *ἀφλοι(δ)σμός* and *ὀ(δ)σμή* (*K. Z.* xxvii. 313).

πμ is assimilated to μμ in *ὄμμα*, *κλέμμα*. In Lesbian we have ππ in *ὄππατα*.

βμ, φμ are assimilated to μμ in *τρίμμα*, *γράμμα*, *κέκαμμαι*.

Prothesis.

We have already dealt with the phenomena of the development of an indeterminate vowel in the interior of word (p. 69). Prothesis is the name given to this anaptyctic vowel when it appears at the beginning of a word.

Thus before initial ρ we find *ἀ-ράσσω*, *ἄραβος*, Sanskrit √*rambh* (roar)—*ἔρεφος*, *ὄ-ροφος*, *ὀ-ροφή*, cf. English *roof*—*ἔ-ραμαι*, Sanskrit √*ram̥* (be content)—*ἐ-ρείκω*, Sanskrit *likháti*—*ἐ-ρεύγομαι*, Latin *ructare*—*ἐ-ρυθρός*, Latin *ruber*.

Before initial λ, *ἀ-λείφω*, cf. *λίπα*, *λιπαρός*—*ἐ-λαχύς*, Latin *levis*—*ἐ-λεύθερος*, Latin *liber*—*ὀ-λισθάνω*, cf. *λισσός*, and

Homeric *λῖτα πετάσσας* — *ὀ-λίγος*, cf. Hesychius *λιζόν· ἔλαττον.*

Before initial *μ*, *ἀ-μαλός*, cf. *μαλακός*, Latin *mollis*—*ἀ-μέλγω*, cf. Homeric *Ἱππη-μολγοί*, Latin *mulgeo*—*ἀμύνω*, Latin *moenia* —*ἀ-μύσσω*, Latin *mucro.*

Before initial *Ϝ*, *ε-ὐρύς*, *ε-ἶρος*, *ε-ἴλη*, *ἐ-έρση*, *ἐ-είκοσι*, *ε-ἰλαπίνη*, cf. *voluptas* ; *α-ὐξάνω*, cf. *ἀϜέξω*, Latin *veg-eo.*

Before a consonantal group, *ἐ-χθές* beside *χθές*—*ἰ-χθύς*—*ἀ-σκαρίζω*—*ἀ-σπαίρω* beside *σπαίρω*—*ἀ-στήρ* : but we cannot in these cases be sure that the initial vowel is merely prothetic; it may be the result of composition, or else an original part of the root. Other instances are *ἴ-σθι*, *ἀ-κροάομαι*, *ὄ-βριμος*, *ἄ-φλαστον.* We may however compare the similar prothetic vowel before double consonants in the Romance languages, e. g. *escalier*, Lat. *scala*, *espérer*, Lat. *sperare*, etc. It is conceivable that the prothetic vowel may have originally occurred in many cases only where the preceding word ended with a consonant, after which an initial group of consonants would be difficult to pronounce. Compare the similar case of *τέγος* used after consonants, *στέγος* after vowels.

Epenthesis.

In certain cases where the semivowels *ι̯* and *υ̯* follow a consonant, the preceding syllable undergoes a change. Where the succeeding semivowel is *ι̯*, the preceding syllable is palatalised. The *ι̯* or *υ̯* disappears after the consonant, and reappears in the preceding syllable. The final consonant of the preceding syllable is either *ν*, *μ*, *ρ*, *σ*, or *Ϝ*.

Thus *φαν-ι̯ω* becomes *φαίνω*, *κον-ι̯ος* (= *κομ-ι̯ος*) becomes *κοινός*, *μακαρι̯α* becomes *μάκαιρα*, *τεκταν-ι̯ω* becomes *τεκταίνω.*

ν and *μ* may be the last member of a combination *κν*, *πν*, *φν*, *τν*, *δν*, *χμ*, e. g. *ἀκν-ι̯ον*, *αἶκνον*—*δεπν-ι̯ον*, *δεῖπνον*—*ἐξαφ-νι̯ᾱς*, *ἐξαίφνης*, cf. *ἄφνω*—*δεσ-ποτνι̯α*, *δέσποινα*—*ῥαδνι̯ω*, *ῥαίνω*—*ἀχμι̯α αἰχμή*, cf. *ἔγχος*. Other instances of Epenthesis are to be found in *μέλαινα*, *τάλαινα*, *λέαινα*, *σώτειρα*, *μοῖρα*, *ὄνειρος*, *μάγειρος.*

In such presents as *φθείρω*, the *ει* is not to be regarded as the result of Epenthesis. In Lesbian we have *φθέρρω*, in Arcadian *φθήρω*, so that *ει* is rather a compensatory lengthening for the disappearance of *ι̯* of *φθερ-ι̯ω*.

In *κρείττων*, *μείζων* there is no Epenthesis; the *ει* follows the analogy of *χείρων*. In Ionic we have *κρέσσων* for *κρετι̯ων*, and *μέζων* for *μεγ-ι̯ων*.

Instances of *υ̯* Epenthesis are more rare. *ταῦρος* for *ταρυ̯ος* is the most probable, and *κένταυρος* beside Sanskrit *gandharvá*.

Compensatory lengthening.

Under the head of vowel combinations we have already spoken of the compensatory lengthening of a vowel after the disappearance of a succeeding consonant as, e. g. in *στήλη* for *σταλλα*. The phenomena of compensatory lengthening are most frequent in words where *σ* is combined with a liquid or nasal. Thus *πανσα* becomes *πᾶσα*, *τονς* becomes *τούς*, etc.

Before liquids and nasals *σ* passes in sound to *z*. In the Aeolic or Lesbian dialect these combinations are represented by a doubling of the liquid or nasal, e. g. *χέλλιοι* for *χέσλιοι*, *μῆννος* for *μηνσος*. In the other dialects *ρρ* represents *σρ* as in *ἐρρύην*, but in the other combinations the *σ* disappears, and the preceding vowel is lengthened as, e. g. *χηνός* for *χανσος*, *εἶμα* for *ἑσμα*, *φαεινός* for *φαεσνος*, Aeolic *φάεννος*.

Where *σ* is the second member of the combinations we sometimes find it retained as in *τέλσον*, *κόρση*, and sometimes expelled with compensatory lengthening of the preceding vowel as in *ἔμεινα*. This retention of the *σ* is common in Homer, e. g. *Θερσίτης*, *ἀπόϜερσε*, *κύρσαι*, *διαφθέρσει*, *θερσόμενος*, *ἔλσαι*, *κέλσαι*, etc.

Wackernagel (*K. Z.* xxix. 124) has endeavoured to connect the representation of *σ* combined with liquids and nasals with the shifting of accent. Thus where the accent is on the preceding vowel, the final *s* of the syllable is surd and remains; if the accent falls elsewhere the *s* becomes *z*, in which case in Aeolic we have a doubling of the liquid or nasal, and in other dialects a single liquid or nasal with a compensatory lengthening of the preceding vowel.

Thus in *ὅρρος*, new Attic for *ὅρσος*, the accent is on the first syllable, the *σ* is surd and is retained, but in *οὐρά* the accent is on the final syllable, the *σ* disappears and the vowel is lengthened. *ὅρρος* represents *órsos*, but *οὐρά* represents *orzá* which should be in Aeolic **ὅρρα*, in Doric **ὠρά*.

Again *κόρση*, Attic *κόρρη*, has the *σ* surd in the accented syllable, but

κουρεύς has the sonant *z* in the unaccented syllable. The same change is illustrated by *ϝέρση* beside *ϝουρέω* (=*ųorzéō*).

In verbal formations we have *ὦρσε, ὄρσας*, with the accent on the root syllable, and from the root of *ἀραρίσκω, ἄρσας* as compared with *ἄειρεν*. Again, *κείρω* has in Homer in the active *διακέρσαι*, but in the middle *κειράμενος, κείρασθαι*. There are no parallel forms in *rz* to the words *θάρσος, ἐτέρσετο, χέρσος*.

From *χείρ* we find in Homer the stem *χειρ-* before vowels, *χερ-* before consonants. The one exception to this rule is the use of dative sing. in such a phrase as *ἐν χερὶ θῆκεν* which is due to the analogy of the similar *ἐν χερσὶν ἔθηκεν*. The true stem of the word is *χερσ- χερεσ-* as we see from *δυσχερής*. *χειρός* then is for *χερσός*, and the *ει* has been extended by analogy to *χεῖρα* for *χέρεσα, χέρσα*.

Of combinations with *λ* we find *ἄλσος, τέλσον, ἔλσαι* side by side with *ἔσφηλα, ἤγγειλα, ὤκειλα* where the accent is of necessity upon the augment.

The combination *νσ* appears in *νίσομαι* for *νινσομαι*, in *πεφήσεται* for *πεφείσεται* from *πεφενσεται*, and in *εἴσω* for *ἐνσω*.

The combination *nz* appears in the declension of *χήν, χηνός* (for *χανσός*, cf. Latin *anser*) and *μήν, μηνός* for *μηνσός*, Aeolic *μῆννος*, Latin *mensis*.

σ before a nasal is due to false analogy in the Attic *ἠμφίεσμαι*, which has been formed after the model of *ἠμφίεσται*. The regular form is seen in *εἷμαι*. *σν* passed into *νν* in *ἕννυμι* (*ἑσ-νυμι*), *Πελοπόννησος* (*Πέλοπος νῆσος*). But the Ionic *εἵνυμι* shows the more regular form.

In the combination of *νσ*, followed by a consonant, the nasal fell out without other change, e. g. *κεντ-, κεστός—δενσ-, δεσ-πότης—συν-στ-, σύστασις—ἐνσ-, ἔστε* (until)—*χαριεντ-, χαριέστερος—πεντηκοντα, πεντηκοστός*.

Loss of a consonant.

An accumulation of consonants was lightened by the disappearance of one of them from the group, e. g. *τιθεντς, τιθενς, τιθείς—περθσαι, πέρσαι—πσταρν-, πτάρνυμαι*, cf. Latin (*p*)*sternuo—πσδ-εω, βδέω—σπι̯υ-, πτύ-ω—πτρα-, τράπεζα—ῥαδυ̯-, ῥαίνω—λεκστο, λέκτο—ἑίκσκω, ἑίσκω*.

Dissimilation.

We have dissimilation of *υ* to *ι*, perhaps in *πινυτός* for *πυνυτος*, *ψιθυρός* for *ψυθ-*. Cf. *ψυθίζω· ψιθυρίζω* (Hesych.).

Of *ρ* to *λ* in *ναύκλᾱρος* for *ναυ-κρα-ρος*.

λ to *ρ* in *ἄλγος* beside *ἀργαλέος*.

Loss of liquid by dissimilation occurs in *ἔκπαγλος* for *ἐκπλαγλος, δρύφακτος* for *δρυ-φρακτος*.

Dissimilation of aspirates occurs in τίθημι for θιθημι—ἐτέθην for ἐθεθην—ἐπύθετο for ἐφυθετο—τριχός for θριχος—ἐκεχειρία for ἐχεχειρια—ἔχω for ἑχω for σεχω—ἴσχω for ἱσχω for σισχω—ἔδεθλον beside ἕδος—ἄ-λοχος beside ἅ-παξ. So also τέθητι for θεθηθι—τύθητι for θυθηθι—ἔταφον for ἔθαφον—θρέψω but τρέφω—θρέξω but τρέχω—θράσσω but τρᾱχύς.

For σωθηθι we have σώθητι rather than σωτηθι, because this last would obscure the -θη- suffix of the aorist. In χύθητι there is no dissimilation, but the double aspirate is kept, as dissimilation would obscure the verbal and tense stems, χέω, ἔχεα, ἐχύθην.

Syllabic dissimilation, in which one of two neighbouring and similar syllables is lost, occurs in ἀμ(φι)φορεύς—κέν(τη)τωρ—θάρ(σο)συνος — τέτρα(δρα)χμον Παλα(μο)μήδης — Πλεισ(το)θένης.

Metathesis. Metathesis of consonants is very rare—τίκ-τω for τι-τκ-ω, σκέπ-τομαι, Latin *specio*, ξίφος beside Lesb. σκίφος.

The old instances given as cases of metathesis can be otherwise explained, e.g. in ἔ-σχε-ς we have the reduced root (p. 227) and πλῆ-το points to original root *plē* not *pel*. Other supposed instances of metathesis have been already explained in treating of nasal and liquid sonants, e.g. στρωτός, μέμβλωκα, θρώσκω, etc. (p. 115).

Final Consonants. At the end of a word, the Greek rule is to admit only the consonants ν, ρ, ς, e.g. πάτερ, πέπον, ἵππος. Where other consonants would naturally come they either disappear, as in ἔφερε, Sanskrit *ábharat*, ἦσαν, Latin *erant*, γύναι(κ), ἄνα(κτ), ἦ(κτ), or are changed to ς, as οὕτως for οὕτωδ. Final *m* in Greek appears as ν—Sanskrit *tám*, Latin *istum*, Greek τόν.

There are monosyllabic exceptions to these rules, e.g. ἐκ and οὐκ, but of these ἐκ stands for ἐξ before consonants, οὐκ for οὐκί or οὐχί before vowels.

Combination of It will be convenient, in considering the laws of consonantal combination in Latin, to distinguish three possible cases: that

Consonants in Latin.

in which the consonantal combination is initial, and therefore precedes a vowel-sound; that in which it is medial, and therefore stands between two vowels; and that in which it is final, and therefore follows a vowel-sound. Those combinations only that are of special philological interest will be treated of in detail here.

Combinations of Mutes and Spirants.
(1) Two initial mutes.

Of two mutes the first disappears. The instances are not numerous, but *tilia* corresponds to the Greek πτελέα, and points to a primitive *ptelea*. In inseriptions we find *Tesiphon*, *Tolemaid* for *Ctesiphon*, *Ptolemaid* (*Inscr. Regn. Neap.* 3395). In πτίσσω beside *pi-n-so*, *Pis-tor*, Sanskrit √*piṣ*, *pi-na-ṣṭi* (Curt. *G. E.* 277) the second mute seems to have dropped.

(2) Initial Mute and Spirant.

Initial *ps* becomes *p* (*ps* only occurs initially in words borrowed from the Greek), e.g.—

ψύλλα : pul-ex. ψιλοῦν : pil-are.
ψηλαφᾶν : palpare. ψάρ : par-us.

The connexion of ψάμαθος with *sabulum*, *sabulo*, is more than doubtful, as the consonants nowhere agree. ψάμ(α)θος is more probably identical with the English *sand*.

Initial *pst* becomes *st*.

So πτάρνυ-μαι : sternuo √*pstr̥n*.
πτύρεσθαι : consternare, ex-sternare.

The attempt to connect these last with *sternere*, στορέννυμι is not satisfactory as regards the meaning and does not account for the conjugation.

(3) Initial Spirant and Mute.

The characteristic of this combination is the frequent loss of the initial spirant—a loss which runs through the whole of the Indo-European families. The survival in any one word or language seems very much the result of accident. An ingenious explanation, however, has been offered. In Sanskrit and in Greek *s* regularly disappears in the middle of a word between two mutes. Thus we have Greek ἕκτος corresponding to Latin *sextus*. It is accordingly suggested that where an initial *s* followed by a mute was preceded by a mute at the end of the preceding word, and therefore in the sentence-combination stood between two mutes, it disappeared: where, on the other hand, the preceding word ended in a vowel, the *s* was kept. Thus in the original language they may have said *ŭd-peki̯ō* but *perĭ-speki̯ō*. When the individual word rather than the spoken sentence came to be considered as the unit of language, it was a matter of accident whether the form adopted in any language was that in which the word was preceded by a vowel or that in which it was preceded by a consonant. The same principle may account for the absence of the final *-s* in some forms of the nom. sing. The original language may, e.g. have used *népōts-esti* by the side of *népōt-qe*, whence may have arisen on the one hand the Sanskrit nom. *napāt*, on the other hand the Latin nom. *nepō(t)s*. (See *M. U.* iv. 329.)

Loss of final *s*. The same reason may underlie the loss of a final *-s*, which was so common in Latin till the time of Cicero. The *s* would at first have been kept before a word beginning with a vowel, but lost before one beginning with a consonant under the same circumstances as entail the loss of *s* initially or in the middle of a word. That is, as **squiescit* became *quiescit*, so *confectus-quiescit* became *confectu' quiescit*, and as *corpuslentus* became *corpulentus* (p. 213), so *confectus-labore* became *confectu' labore*.

Loss of initial *s*: (*a*) before *c*; Instances of the loss of initial *s* in Latin are—

cerno : Goth. *skeirs* (pure), cf. A.-S. *hri-dder*, English *riddle* (a sieve). Cf. κρίνω, cri-brum, etc.

cŭtis : scūtum, κῦτος, σκῦτος. Cf. ob-scu-rus, ἐπι-σκύνιον.

coruscus, Old Lat. scoruscus.

corium : scortum.

cena, Old Lat. scesnas (Festus). Cf. κναδάλλω, Sanskrit √*khād* (chew).

cavere : Gothic *usskavs*, Germ. *schauen*, English *show*.

The root also appears in κοϝέω, ἔκομεν· ᾐσθόμεθα (Hesych.), and possibly in ἀ-κούειν (for ἀ-σκοϝ-ειν). Traces of the original spirant are seen in θυο-σκόϝ-ος.

We may notice also—

quies : *κτίζω, κτίμενος*, √*ŝki*, Sk. *kṣéti*, whence tran(s)quil-lus, *κτίλος*.

But *capisterium* beside *σκαφιστήριον* seems merely a case of popular etymology, the word being borrowed, and falsely assimilated to *capio*.

curtus, A.-S. *sceort*, English *short*.

caedo, A.-S. *scítan*, German *scheit*.

tonare : *στόνος*. (*b*) before *t*;

tego : *στέγω*.

tur-dus : stur-nus.

tundere : Goth. *stautan*, English *stunt*.

tibia (the shin bone) : *στείβω*.

trio (septem triones) : stella (for ster-la).

For interchange of *ri* and *er* see p. 192.

tergere : strig-ilis ; cf. *στλεγγίς* (?).

torus : *στόρνυμι*.

sterno cannot be separated from this root.

pumex : spuma. (*c*) before *p*.

We may connect *spuo*, Greek *πτύω*.

parcus : *σπαρνός*.

There are some cases where the sound following the spirant appears variously as a dental, labial, or guttural; but the nature of the original combination is obscure. Thus we have:—

studium : *σπεύδω*.

turgere : *σπαργᾶν*.

talpa : *σπάλαξ* and *σκάλοψ*.

stercus : *σκώρ*, Sanskrit *çakṛt*; cf. *στεργάνος* (Hesych.).

-specere : *σκέπτεσθαι*, Sanskrit √*spaç, paç* (see p. 414).

scaber : *ψαφαρός*.

scintilla : *σπινθήρ*.

σκῦλον is probably distinct from *spolia* and connected with *σκύλλω* ; *spatium* is said to be from *στάδιον*, through the Doric form *σπάδιον*, but in this case the confusion would have originated in Greek.

sperno has been connected with *πτέρνα*, but the corresponding Sanskrit *párṣnis* is against this, and the Greek *τ* may be compared with the unexplained *πτολίεθρον*, *πτόλεμος* (cf. p. 195).

In *qui-squil-iae*, Greek *κο-σκυλ-μάτια*, the *σ* is lost in the reduplication in both languages; cf. *σκύλλω*.

(4) Two Initial Spirants. *su̯* appears variously as *s* or *su*, but the laws under which it takes one or the other shape are not as yet known.

(*a*) As *su* in—

suavis, suadeo : ἡδύς (for σϝāδύς), Sanskrit *svādús*.

With this may be connected *suavium* (also *savium*).

suēsco : ἔθος (for σϝέθος), ἦθος.

Initial *su̯e* becomes *so* in—

sodalis : ἔθος (contrast suē-sco).

Possibly *sodes*, if not for *si audes*, according to the traditional account, may be a vocative from the same root ('my friend').

soror : Sanskrit *svásar*, Indo-European *su̯ésor*.

sordidus : suasum. Cf. English *swart*, German *schwarz*.

sudor : ἱδρώς for σϝιδρως, Sanskrit *svéda*.

sudor stands for **soidor* (as *unus* for *oinos*), and this for *su̯eidor*. Cf. English *sweat*, German *Schweiss*.

socer : ἑκυρός for σϝεκυρος, Sanskrit *çváçura*.

somnus : ὕπνος for σϝεπνος.

sex is proved by digamma in Greek inscriptions (*ϝεξήκοντα*, *ϝεξακάτιοι*, etc.) and by the Welsh *chwech* to be for *su̯ex*: in this word the simple *s* in Latin may be due to early assimilation to *septem*, before the time when *su̯e-* passed to *so-* (*M. U.* i. 96).

(*b*) As *s* in—

salum : σάλος, English *swallow*.

This and the following comparisons with Greek depend on the law of that language that an initial *σ* followed by a vowel has always lost a *ϝ* after the *σ*.

saltus : σαίρω, English *sward*.

sero : σειρά for *σερι̯α.

se : ἑ for σϝε.

serenus (for seres-nus) : σέλας.

si : Oscan svaí.

In the case of *funda*, *fungus* it is usual to say that they are borrowed from the Greek σφενδόνη, σφόγγος, and that *f* consequently represents *sf*. But more probably the exact form of the words is due merely to assimilation to *fundere*, *fungi*. *fallere* is often compared with the Greek σφάλλειν, but the root is more probably *dhu̯al*, the Gothic *dvals*.

Medial combination.

A media before a tenuis becomes assimilated to the tenuis.

1. Two Mutes.

Thus *ag-o*, *ac-tum*; *scrib-o*, *scrip-tum*; *veho* (for *vegh-o*, Greek ὄχος), *vec-tum*.

The combination of *d*, *dh*, *t*, with a supplementary *t*, demands a fuller treatment, and cannot be discussed without reference to the question of the real quantity of vowels in syllables long by position. (*M. U.* iii. 131; Osthoff, *Z. G. d. P.* 152, 522 sq.)

Vowels long by position.

The question at issue is this: are we to suppose that in *missus*, e.g. (for *mit-tus*) the vowel is naturally long, as in *mīsi*, and that we have the strong form of the stem, or that the past participle in this case follows the general analogy of such formations in taking the reduced form, and that *mĭssus* is to be compared with λῠτός?

The data for deciding this question are threefold:—

(i) The transcription of such forms in Greek. The quantity of the *o* in *fossus*, for example, seems determined by φόσσα in Plut. *Fab. Max.* 1.

(ii) The use of distinctive characters for the long vowels in Inscriptions, e.g. the apex (JÚLIÓ), the doubling of the vowel (PAASTORES), the writing of the long *i* as the diphthong *ei* (MEILIA) or taller than the other letters (cIvIcA). But this last instance, from the *Monumentum Ancyranum*, is sufficient to show how little dependence can be placed on this sort of evidence.

(iii) The most important evidence obtained is from the various ways in which the long and short vowels, independent of position, are represented in the Romance languages. The following is a list of the principal representatives:—

Latin *ĭ* is Romance *é* (close vowel).
„ *ī* „ *i*.
„ *ĕ* „ *è* (open vowel).
„ *ē* „ *é* (close vowel).
„ *ŭ* „ *ó* (close vowel).
„ *ū* „ *u*.
„ *ā*, *ă* „ *a*.
„ *ŏ* „ *ò* (open vowel).
„ *ō* „ *ó* (close vowel).

Thus we have—

fĭssus, Italian *fesso*, but trīstis, French *triste*, Ital. *triste*.
spĭssus, „ *spesso*, but quīnque, French *cinq*, Ital. *cinque*.
mĭssus, „ *messo*.
percŭssi, „ *percossi*, but ūstus, Italian *perusto*. Cf. French *brûler* (perustilare).
rŭssus, „ *rosso*.
grĕssus, French *pro-grès*.
cĕssus, Italian *cèsso*, French *ex-cès*.
pĕssimus, „ *pèssimo*.
fŏssus, „ *fòsso*.

Forms with double and single Consonants.

We have, however, a set of double forms in Latin, which also often appear in the Romance languages, one set with a long vowel followed by a single consonant, the other with a short vowel followed by a double consonant. Thus—

*mītere, German *meiden*, beside mĭttere, French *mettre*.
lītera, lītus, beside lĭttera, lĭttus, French *lettre*.
būca „ bŭcca, Italian *bocca*, French *bouche*.
cūpa, Fr. *cuve* „ cŭppa, Italian *coppa*, French *coupe*.
sūcus, Fr. *suc* „ sŭccus.
glūtire „ { glŭttire, Ital. *inghiottire*, Fr. *engloutir*.
mūcus, Gk. *μῦκος* „ mŭccus, Italian *moccio*.

So stūpa : stuppa,
Jūpiter : Jŭppiter,
mūtire : mŭttire, where both forms are equally well authenticated.

The existence of these doublets is so far unexplained.

Latin *ss*.

As far as concerns the Latin combination *ss*, the following law may be laid down.

A. Indo-Germanic *t*, *th*, *d*, *dh* followed by *t* between vowels and after nasals and liquids becomes in Latin, except before *r*, in the first instance *ss*.

This *ss* is—

(i) kept as *ss* when immediately following a short vowel; hence *scĭssus*, *mĭssus*, *fĭssus*, *possĕssus*, *concŭssus*, *jŭssus* (from *scĭd-tus*, *mĭt-tus*, *fĭd-tus*, *possĕd-tus*, *concŭt-tus*, *jŭdh-tus*). *ussimus*, *gessimus* are from an original *s* + *s*.

(ii) written as *s* after a long vowel: hence *vīsus*, *caesus*, *laesus*. *rāsimus*, *suāsimus* are from an original *d* + *s*.

We may especially notice the case of the ordinals, e.g. *vicensimus* for *vicent-timus*, *vik̂n̥t-timo-s*, etc.

Cases where the combination appears after a nasal or liquid are *versus* for *vert-tus*, *sensus* for *sent-tus*, *morsus* for *mord-tus*, *scansum* for *scand-tum*, etc. So *tensus* for *tend-tus*, but *tentus* for *tn̥-tus*.

All exceptions to this rule are the result, not of phonetic law, but of analogy. Thus *ed-s*, *ed-t* become *es*, *est* from the analogy of *es*, *est* for *es-s*, *es-t*. So *comestus* (by the side of *adēsus*) is formed on the analogy of *gestus*. Similarly *potestas* (stem *poti-*), *egestas* (stem *egē-*), are on the analogy of *honestas* (stem *hones-*).

But an original *st* is unaltered in Latin, as in *ges-tus* (*gero* for *ges-o*), *tos-tus* (for *tors-tus*, *torr-eo*, τέρσ-ομαι), *ves-tis* (Ϝεσ-θής), *gus-tare* (γεύ(σ)-ω), *hones-tas* (stem *honos-*, *hones-*), *sceles-tus* (stem *scelos-*, *sceles-*). In every case where *ss* (*s*) appears in place of an original *st* the result is due to analogy; thus we have *censor*, *censum*, beside Oscan *censtur*, on the model of *defensor*, *defensus*; *pinsum* (also *pistor*) beside *sensus*; *hausurus* (for *hausturus*) beside *clausurus*; *cursus* (from *curro* for **curso*) beside *morsus*, etc. And indeed the analogy of those forms where the *s* in the past participle is legitimate explains the appearance of *s* in e.g. *lapsus* (for *laptus*, cf. *scriptus*), *fixus* (for *fictus*, cf. *lictor* from *ligo*), *parsus* (for *parctus* or *partus*, cf. *arceo*, *arctus*, *artus*). In some cases, however, the influence of the sigmatic perfect may have been operative.

B. An original *t*, *th*, *d*, *dh*, followed by *t* before *r*, becomes *str-*, hence *rostrum*, *claustrum*, *rastrum*, *pedestris*, *equestris*, *palustris*, *frustra*, *possestrix*, *tonstrix*.

In a few cases there are traces of a different treatment of *dh* + *t* resulting in a metathesis of the aspirate, such as we find in Sanskrit, where *dh* + *t* becomes *-ddh-*. Thus an original *d* followed by *dh*, resulting from an earlier *dh* + *t*, passed to *zdh*, then to *sþ* (where *þ* is the toneless aspirate), and thence to *st*, *þ* being kept as a dental by the dental sibilant *s*, but changed to the corresponding tenuis.

Thus aestas, aestus from √*aidh*, Greek *αἴθω*.
custos „ √*keudh*, Greek *κεύθω*.
hostis (hasta) „ √*ghēdh*, *ghedh*, Sk. *gádhya*.
castus „ √*kadh*, Greek *καθαρός*.
manifestus, infestus „ √*bhedh*.

In *infensus*, *defensus* the *n* comes from the present stem, and *nst* becomes *ns*, as in *censor*, Oscan *censtur*; but *manifestus*, *infestus*, though from the same root, have no corresponding verbal forms to influence them.

crēdo is Sanskrit *çraddha*, i.e. *crezdho* = *cresþo*, *cresdo* = *crēdo*, this form (instead of *cresto*) being due to the other compounds of the root *dhē* (*θη-*), e.g. *ab-do*.

văstus (in '*vastus aether*,' the hollow sky) is thought to stand for *văd-dhós* (*ved-dhós*, *vədh-tós*), past participle of √*vēdh*, which appears in *ūdh-r̥* (*οὖθαρ*, *uber*). The identical form *vāstus* (vast) with a long *ā* is from a different root, which appears in Celtic (*K. Z.* xxviii. 166).

Other combinations of Mutes.

Medial *-dc-*, *-gb-*, *-gd-* become *-c-*, *-b-*, *-d-*, the preceding vowel being lengthened.

Thus postī-cus, antī-cus : postid-ea, antid-ea.
fībula, stem fig- in figo.
jūbilo, cf. *ἰυγ-ή*.
tēba, stem teg- in tego.
ūdus, stem ug-, cf. *ὑγ-ρός*.

But in other cases assimilation of *-dc-* to *-cc-* takes place, and the preceding vowel is then naturally short; thus *pĕccare* for *ped-care* (cf. *pessum* for *ped-tum*, *pes*, *imped-ire*); *flŏccus* for *flod-cus* (cf. φλάζω), cf. *sĭccus* for *sitcus* (*sit-is*), and regularly in composition, *accipio*, *acquiro*, etc.

Medial *-dp-*, *-bc-*, *-bf-*, *-bg-*, *-bp-* assimilate to *-pp-*, *-cc-*, *-ff-*, *-gg-*, *-pp-* in *topper* (*tod-per*, cf. *parum-per*), *occurro*, *offero*, *suggero*, *oppono*, etc.

2. Combination of Mute and Spirant.

-bsp- becomes *-sp-* in *asporto*.
-csc-, *-gsc-* „ *-sc-* in *posco* for *porc-sco* (cf. *prec-or*, *proc-us*);
disco for *di-dc-sco*, a reduplicated inceptive; cf. *di-dic-i*.

misceo is for *mig-sc-e-o*; cf. μίγ-νυ-μι.

-cst-, *-gst-* become *-st-* in *Sestius* (cf. *Sextius*).
mistus (cf. *mixtus*).
illustris (cf. *luc-eo*).

In *Sestius* : *Sextius* we may notice a difference of quantity, as indicated by Greek Σήστιος : Σέξτιος.

d, *dh*, *t* followed by *s* become—

(i) *ss* after a short vowel.
(ii) *s* after a long vowel.

Thus *quăssi* (*quat-si*), *pŏsse* (*pot'sse* by syncope), *jŭssi* (for *judh-si*), but *mīsi* (for *mīt-si*).

-bf-, *-pf-* become *ff* in e. g. *officio*, *officina* (*op-us*).

3. Combination of Spirant and Mute.

The most important case is that in which *s* appears before a media, but the same rule holds good if the second consonant is any sonant. In all these combinations the surd spirant *s* becomes, in the first instance, the corresponding sonant *z*, and then disappears; an accented vowel before the combination is long, an unaccented vowel short.

Thus Căména : Casména (Fest. 67, 205).

sī́do	for	sí-sd-o, a reduplicated present; cf. ἵζω for σῐ-σδ-ω.
trḗdecim	for	trésdecim.
jū́dex	for	jús-dex.
mīles	for	mísd-es (cf. μισθ-ός).
ī́dem	for	ísdem.

nī́dus (perhaps) for nísdus (English *nest*).
aúdire for aús-dire; cf. aur-is, aus-culto, *οὖς*.
mā́lus for másdus (English *mast*).

On the other hand we have *sátĭn*, *vídĕn*, *tácĕn*, *rógăn*, *sédĭbus* for *sédes-bos*, *vídimus* for *vídes-mos*, Sanskrit *ávedisma*, etc. (*K. Z.* xxvii. 328).

Of special interest here are the adjectives in *-ĭdus* and kindred forms. They seem to have arisen from stems ending in *-s* with the suffix *-do*. Thus *frígidus* will come from *frī́ges-dus*, just as *mólibus* from *móles-bos*. They frequently correspond to abstract substantives in *-or*, and we may suppose, e. g. an original *frīgōs*, genitive *frigesos*, adjective *frĭges-dó-*, with an abstract substantive *frī́gesdo**, genitive *frī́gesdnis*. Then, when the retraction of the accent began to come in, a penultimate syllable protected by three consonants would tend to keep the accent from retreating further than that syllable, and we might get *frī́gesdus*, *frī́gesdo*, but *frigésdnis*, whence *frígidus*, **frī́gido* but *frigédnis*, which last must become *frigēdinis*, whence was formed a nominative *frigēdo*. In some cases a syncope of the unaccented syllable takes place, and we have *calidus* and *caldus*, *aridus* and *ardor*. It would seem that the adjectival termination *-dó* was originally accented, and the stem vowel consequently short.

Similarly there may have been an adjective **oresdús* with an abstract substantive **óresdo*, genitive **orsdnís*, whence **ordnis* and *ordinis*, which produced a nominative *ordo*; or the form *ordo*, not **orēdo*, may be due to the fact that there is no *ē*-verb (as with *frigēre* beside *frigēdo*) to determine the vowel.

libīdo (stem *libē-* in *libēre*) may owe its *ī* to the *ī* in *cupīdo* (stem *cupī-* in *cupīre*). *formīdo* is obscure (*K. Z.* xxviii. 167).

-st- is a stable compound, and remains in *aus-ter*, *exta* (*ec-sta*), *fustis* (for *furs-tis*, cf. *θύρσ-os*), etc. So *aestimo* possibly for *aes-tem-o*; cf. *τέμ-νω*, *τέμ-αχος* (Havet, *Mém. Soc. Ling.* vi. 23). The appearance of *ss* (*s*) for *st* by analogy has been explained above.

In general we may say that the combination of the soft sibilant *z*, followed by *b*, *g*, *d*, *m*, *n*, *r* loses the sibilant, and lengthens the preceding vowel, if it carries the accent, whereas the combinations with the hard spirant, *sc*, *sp*, *sq*, *ss*, *st* remain intact. *sq* however often loses the spirant, as *inquam* for *in-squā-m*, *coinquo* for *co-in-squ-o*, √*sek̑* in *seco*.

4. Combination of Spirants.

-*zv*- becomes -*rv*- in *furvus* (cf. *fuscus*), *acervus* (cf. *acus*, *aceris*). *dīvello*, *dīvergo* are on the analogy of *dī-gressus*, etc.
-*sf*- is assimilated to -*ff*- in *difficilis*, etc.

Final combinations.

No combination of two consonants (except *x*) is allowed, so we get *as* (for **ass*, cf. *ass-is*), *lac* (for *lact*), *cor* (for *cord*), etc.

t and *d* followed by *s* become simple *s* (through *ss*), e.g. in *milĕs* (*milit*-), *pēs* (*ped*-), the final vowel of the stem being short, except in monosyllables.

Any guttural followed by *s* becomes *x*; e.g. *rex*, *lux*.

-*bs* or -*ps* are the result of syncope in *urbs* (stem *urbi*), *plebs* (stem *plebi*), *trabs* (*trabes*), etc.

-*cts* becomes *x* in *nox*.

Combinations of semivowels, mutes, and spirants.

A. Initial. I. Mute and semivowel.

di̯ becomes *j* in *Ju-piter*; cf. Ζεύς, Sanskrit *Dyāus*.

du̯ becomes *b* (sometimes *d*) in *bellum* (*duellum*); *bis*, *bimus* (*dimus*), cf. δίς, δύο.

cu̯ seems to become *c* in *canis* (cf. κυον-), *calix* (κύλιξ).

tu̯ becomes *t* in *te*, *tibi*, Sanskrit *tva*.

dhu̯ becomes *f* in *fores* (*dhu̯r̥*, cf. θύρα), *follis* (*dhu̯l̥*, θύλακος).

tl certainly becomes *l* in *lātus* (τλατός). But *lătus* for **platus* (πλατύς)*, *libum* for *clibum* (κλίβανος, Anglo-Saxon *hláf*, English *loaf*), and *lamentum* for *clamentum* (*clamo*) can hardly be accepted, for initial *pl*, *cl* are constant in Latin; *latera* may be borrowed from λάπαρα (as *bracchium* from βραχίων), the feminine singular being taken as a neuter plural, with *t* for *p* on the analogy of *lātus*, *lateo* (cf. Κύκλωπες with *coclites* on the analogy of *milites*), see Havet, *Mém. Soc. Ling.* vi. 23.

gn in classical times becomes *n*, e.g. *nosco* : *i-gnarus*—*nascor* : *co-gnatus*—*nixi* : *genu*—*nodus* for *gnodus* (English *knot*).

In *cognōmen*, *ignominia* the *g* is by false analogy from *cognatus*, etc.

hl, *ghl* seem to become *l* in *luridus*, cf. χλωρός, and perhaps in *lutum*, *luteus*, cf. χρυσός, χρυσέος.

gl perhaps becomes *l* in *lac* for *glac* (γάλα).

2. Spirant and semivowel. *sm*, *sn*, *sl* lose the spirant, perhaps for the same reason as suggested above (p. 202).

Thus we have—

mirus, Sanskrit √*smi*, English *smile*, *smirk*.
macula, Greek σμάω.
mica, Greek σμικρός, μικρός.
laxus, English *slack*.
nix, English *snow*.
nurus, Sanskrit *snuṣa*, German *Schnur*.
limus, English *slime* (but *lime*, Anglo-Saxon *lím*, shows the non-sibilated root); cf. ὀλισθάνω for ὀ-σλιθ-θανω, English *slide*.
mordere, Greek σμερδ-νός, English *smart*.

sr may become *fr* (through *þr*, where *þ* is the hard dental aspirate) in *frigus* : ῥῖγος—*fragum* : ῥάξ (but cf. *racemus*). On the other hand, *Roma*, *Rumo* (the old name of the Tiber, cf. Στρυμών, English *stream*) seem to be from a root *sru*, in ῥέω and perhaps *ruo*, cf. ἀμφίρρυτος = ἀμφι-σρυ-τος; and, medially at least, *sr* becomes in Latin -*br*- (cf. *con-sobr-inus* for *con-sosr-inus*, *funeb-ris* for *funes-ris*), so that the change of *sr* to *fr* must be considered doubtful.

Metathesis of the liquid seems to have taken place in *sarcio* beside ῥάπτω, *sorbeo* beside ῥοφέω.

vl, *vr* become *l*, *r* in *lana* (λάχνη) : *vellus* (ἔριον, Ϝερ-ιον)—*lorum* : εὔληρα (ἐ-Ϝληρα)—*radix* (*vr̥d-ic-s*) : English *wort* (*vr̥t*).

lacer has been connected with *vol-nus*, but cf. λακερός, which may however be for Ϝl̥κ-εροs.

rēpo may possibly be Greek ῥέπω (Ϝρεπ-), but the quantity of the vowel is against it.

3. Spirant, mute, and semivowel. *stl* becomes *l* in *locus*, Old Latin *stlocus*.
lis „ *stlis* (German *Streit*).

stlataria may be connected with *lātus*, *τλατός*.

spl becomes *l* in *lien* for *splihen*, *σπλήν* (cf. *σπλάγχνα*). *splen* is borrowed.

In the case of *plumbum* the *p* probably represents an original *m*, cf. *μ-ό-λυβος*.

B. Medial.
1. Combinations of mute, spirant, and semivowel.

A medial mute before a semivowel is ordinarily lost, and the preceding vowel lengthened; thus—fīlum (fig-o).

pūmilus, cf. pug-io, pug-il, *πύξ*, Πυγμαῖος.
pīla for *pigla, pi-n-go.
exāmen (ăgo), but cf. agmen.
jūmentum (jŭg-um).

But *stĭlus*, *stĭmulus*, (√*stig* in *στιγμή*) have short *i*.

contāminare, cf. ta-n-go, tago.
rīma, cf. ri-n-gi, *ἐ-ρείκ-ω*, √*rik*.
āio for ahi̯o, cf. *ἠχ-ώ*, *ἤχ-ανεν*.
frūmen, cf. *φάρυγ-ξ*.
mājor for mahi̯or, *μῆχος*.
rūmentum, cf. ab-rup-tio.
āmentum for admentum.
glūma, cf. glŏb-us, *βόλβος* √*golb*.
tēmo, √*teg*.
caementum (caedo).
cacūmen, Sanskrit *kakúdmant*.
aemidus for aedmidus, cf. *οἶδμα*.

But assimilation seems to have taken place in *flamma* (*flagro*), yet cf. *flā-men*, unless this is for *flad-men*, cf. ἔφλαδον, παφλάζω, German *blṓtan* (Curt. *G. E.* 301); and in *summus* for *supmus* (*sup-er*).

sl, *sm*, *sn* become *l*, *m*, *n*, the preceding vowel being long or short according as it is accented or not.

Thus *vilis* for *veslis* with assimilation of vowels on either side of *l* (p. 71), cf. Sanskrit *vasná*, *vēnum* (=*vesnum*), *ὦνος* (for *Ϝοσ-νος*?).

cā́nus, cf. cas-cus, cas-ca.
pṓne for pos-ne, cf. pos-t.
ahḗneus for ahes-neus.

cḗna, Umbr. cesna.
degúno, cf. gus-tus.
vṓmis for vosmis, cf. *ὕνις* or *ὕννη* (*Fεσ-νις*).
querēla (querella) for queré-sla, but querĭ-mónia.
véhĕmens for véhezmens (cf. for the formation Sanskrit *āyus-mant*).
cŭlína for coc-slina, co-slina, as pālus for pac-slus (pactus), vḗlum for vec-slum (vec-tus).

So *ŏmittere* is not for *om-mittere*, but rather for *ŏz-míttere*, where *oz-* =*ops-*, Greek *ὀψέ* (cf. *ostendere*, *as-porto*). Similarly *mṓles* but *mŏlestus*, from a stem *mogsdhes* in *μόχθ-ος*, the root being *mog-* in *μόγ-ις*, the termination the same as in *λά-σθη* : *mōliri* is from a different root, and presupposes a substantive **mōlos* or *mohlos*=*μοχλός*.

The termination *-slo* which appears in many of these words is also seen e. g. in *ὄχλος* for *Fεχ-σλος* or *Fοχ-σλος*, which corresponds with the Latin *velum* (for *vegh-slo-m*).

Some other cases of the combination *-sn* will be given below (p. 217).

An original *tl* (medial) became in primitive Latin *cl*; thus the suffix *-clo* (*sae-culo-m*, *sae-clu-m*) corresponds to the Greek suffix *-τλο* (*ἄν-τλο-ς*); cf. *exanclare* beside *ἐξαντλεῖν* (borrowed). For the further dissimilation to *-cro* v. infra (*Grundr.* p. 281).

-sr- becomes *-br-* in—

cerebrum for ceres-rum (cf. cernuus for cers-nuus, etc.).
tenebrae for temes-rae, cf. temu(s)-lentus.
membrum for mems-rum.
februus for fes-ruus, cf. fes-tus.

So too the adjectives in *-bris* from substantives in *-os*, *-es*, (*funebris*, *fenebris*, *muliebris*, *celebris*, etc.).

-dtr-, *-ttr-*, as already shown, become *-str-* (p. 208).

-gbr-,*-tbr-* become *-br-* in *libra* (√*lig*), *saluber* (for *salut-br-*).

-csl- becomes *l*, lengthening the preceding vowel, in—

āla : axilla.
vēlum : vexillum.

māla : maxilla.
tālus : taxillus.
pālus : paxillus.
aula : auxilla.
quālus : quasillus.

See Cic. *Or.* 45. 153.

Assimilation of the mute to the following semivowel takes place in sella for sed-la, cf. *ἕδ-ρα*, Laconian *ἑλλά*.

grallae : grad-ior, √*gradh*.
villa : vic-us.
paullus : pauc-us.
rallum : rad-o (or possibly for *rarulum).

-bn-, *-pn-* become *-mn-* in Samnium : Sab-ini.
somnus : sopor, *ὕπ-νος*.
damnum : *δαπ-άνη*, dapes.

So possibly *antennae* for *ant-ep-nae* (root *ap-* in *ap-tus*), if not for *ante-ten-nae* (*ten-eo*), or cf. *trans-ennae* below.

Combinations of a short vowel, dental and *sn* result in a short vowel followed by *nn*, thus:—

pĕnna for petsna, Old Latin pesna.
pĭnna for pitsna, cf. piscis for pitscis.
ănnus for atsnus, cf. Gothic, *aþn*, Sanskrit √*at* (wander),
cf. transenna.

annus cannot be for **ānus*, nor again for *amnus* (Osc. *amnud*), as *mn* is constant (*amnis*). *annona* is only connected by popular etymology with *annus*. It should be **ănona* for **asnona*.

Combinations of a short vowel followed by *-sn-* (*-rsn-*) or by a guttural and *sn* become a long vowel followed by *n*.

Thus arānea is for arag-snea (*ἀράχνη*).
lāna for lag-sna (*λάχνη*) (if not u̯l̥-nā́).
fīnis for fig-snis, Lith. *baigti*.

In the case of *-tn-*, *-dn-*, we get a metathesis to *-nd-* as in
fundus for fud-nus, cf. *πυθ-μήν*.
unda for ud-na, cf. *ὕδωρ*, *Ἁλοσ-ύδνη*.
mendax for ment-nax, cf. ment-ior.
pando for patno, cf. pateo, *πίτ-νη-μι*.
mando, Sanskrit *mathnāmi*, √*math* (shake).

Similarly the gerund stem is formed from the present participle by the suffix *-no-*, e.g. *amando-*, for *amant-no-*.

Again, we may suppose an original **voraco* (cf. *vorax*), gen. **voracnis*, which last became **voragnis* and *voraginis*, whence the new nom. (cf. p. 210). So with *testudo*, *ferrugo*, etc., from an original **testuto* (cf. *testu*), **ferruco* (formed with the same termination as *verruca*).

Planus would seem to be for **plancnus* (*planca*), and *ilignus* for *ilic-gnus* (cf. *abie-gnus*).

On the other hand, *mercennarius* is by a later syncope for *merced*(*i*)*narius*. *Cachinnus* beside καχάζειν may represent *cachn̥d-nus*, but the *ch* seems to show that the word is not purely Latin. *Gannire* is for *gang-nire*, cf. γαγγαλίζω. *Cincinnus* seems to be connected with *cingo* (for *cin-cing-nus?*). The form *grundire* is vouched for by the French *gronder*; *grunnire* will be a dialectic form. Compare the Plautine forms, *distenno*, *dispenno*, from *tendo*, *pando*. *Pecunia* can hardly be for **pecudnia*, as it is an extremely old word, and must be from the pure stem *pecu-*, of which *pecud-* and *pecus* are later amplifications (p. 314).

Similarly *sallere*, *salsus* is from a stem *sald-* (cf. Eng. *salt*), where the stem *sal-* is extended by *d*, as in *pecu-d-*, from *pecu-*. So *percello*, *perculsus* show a stem *keld-*, *kl̥d-*, cf. κλάζω for κλαδι̯ω.

2. Combinations of semivowel and mute or spirant.

r and *l* assimilate a single following mute or spirant. Thus:—

mollis	for moldu̯is	Sanskrit *mṛdú*	βραδύς.
collum	for colsum	German *Hals*.	
velle	for vel-se.		
ferre	for fer-se.		
verres	for verses	Sanskrit *varṣá*.	
farreus		Umbrian farsio.	
porrum	for pr̥som		cf. πράσον.
Dossennus, cf. dorsum.			
verrere, cf. ἀπό-Ϝερσ-ε.			

Where however the *s* is of secondary origin *rs* remains, or becomes *ss* (*s*), as in *russum*, *rusum* for *re-versum*, where *versum* = *vert-tum* (p. 209), cf. *prosa*.

Nasals are assimilated to the following sound, as in *frendo* : χρόμ-α-δος—*ton-deo* : τέμ-νω.

It has been thought that *ms* becomes *ss* in *pressi* for *premsi*, but *contem-p-si* is against this, and *premo* may be for **perdhmo* (cf. πορθμός (a narrow arm of the sea) and for loss of the dental *dormio* : δαρθάνω, *ver-men* for *vert-men*). In this case *pressi* may go back to *perdh-si*.

mt becomes *nt* in *ven-tum* (Sanskrit √*gam*, English *come*), *tento* : *tempto*, etc. The insertion of the *p* is a later device due to a desire to maintain the identity of the word.

Where a semivowel is followed by two mutes or a mute and a spirant, the second letter of the combination is dropped. Thus:—

mulsi for *mulc-si*—*amsanctus* cf. *amb-esus*, ἀμφί, cf. *am-termini*—*fulsi* for *fulg-si*—*ultus* for *ulc-tus*—*arsi* for *ard-si*—*sparsi* for *sparg-si*—*quintus* for *quinctus*, but contrast *functus*, *junctus*, *nanctus* (*nactus*)—*ursus* for *orcsus*, cf. ἄρκτος, Indo-European *r̥kso*—*urvus* for *u̯orgu̯us*, cf. *vergo*—*fortis*, Old Latin *forctis*, *forctus*—*turdus* for *turzdus*, cf. English *throst-le*—*hordeum* for *horzdeum*, Old High German *gersta*.

In the combinations *-nst-*, *-rsc-*, *-rst-* the semivowel is lost, e.g.:—*bimestris* cf. *mensis*—*posco* for *por-sco*, *porc-sco* cf. *precor*—*fustis* for *furstis*, θύρσος—*tostus* for *torstus* (*torreo* for *torseo*, τέρσο-μαι)—*fastigium* for *farstigium*.

Cf. *Maspiter*, older *Marspiter*; *Tuscus* beside *Etruria*, *Turscus*, Umbrian *Tursco*.

In *manifestus*, *pistor*, etc., which are from the past part. stem, the nasal of the present stem does not appear (p. 208).

A mute or spirant between two semivowels is lost, e.g.:—*alnus* for *alsnus*, cf. English *alder* for *alr̥*—*germen* for *gerb-men*, cf. βρέφος, Indo-European *gerbh*, with metathesis of the liquid; otherwise it would become **vermen*—*scala* for *scand-la*—*cernuus* for *cersnuus*, cf. κόρσ-η, ἐγ-κάρσιος—*perna* for *persna*, Sanskrit *pā́rṣni*—*urna* for *urc-na*, cf. *urc-eus*.

-ndtr- by the rule given above (p. 208) becomes *-nstr-* in *tonstrix.*

3. Combinations of semivowels.

-rn- is usually a constant sound, e.g. in *furnus*, but *murra* seems to answer to Greek σμύρνη and *scurra* (for *sku̯erna*) to Old High German *scern*, English *scorn*.

-rn- originates in Latin in three ways:—

(1) An intermediate consonant is lost, as in *urna*, etc., quoted above.

(2) An intermediate vowel is lost, in *quernus* for *ques-i-nus*, *colurnus* for *corul-i-nus.*

(3) The *r* is a liquid sonant in *ornus*, *cornus*, *cornu.* *Cerno*, *sterno*, *sperno* are doubtful, but as the suffix *-nó* is accented, the root must have originally appeared in the reduced form.

lv is generally kept, as in *salvus*, *calvus*, *pelvis*, *silva*, *solvo*, etc. In many of these words the *v* was capable of becoming a vowel, as in *siluae* (Hor. *Epod.* 13. 2), *soluit* (Catull. 2. 13), and frequently we find in inscriptions a vowel introduced to mark this pronunciation (*Sulevia* for *Silvia*, *Sulvia*), or a doubling of the character V, as in INGENVVAE. In other cases, however, the *v* was assimilated to the preceding liquid (as Greek πολϝη = πολλή). Thus we get side by side *pulvis* and *pollen* (? cf. p. 301), (where the difference is the same as in *sanguis* : *sanguen*); *sōlus* or *sollus* and ὅλος (ὅλϝος, Ionic οὗλος) (cf. p. 185); *mel*(*l*) and μέθυ, Sanskrit *madhu*; *tollo* (for *tolu̯o*) and *tolu-tim*; perhaps *fel*(*u̯*)*is* and θῆλυ-ς (Bréal, *Mém. Soc. Ling.* vi. 120).

Of other combinations of semivowels the following may be noticed:—

-mi̯- becomes *-ni̯-*, in *venio* for *gm̥i̯o*, cf. *meare* for **gm-eare*; *quoniam* for *quomiam*; so perhaps *conicio*, etc. for *comi̯icio.* For Greek instances cf. p. 135.

-mr- becomes *-nr-* in *gener* from *gemro-*, cf. γαμβρός.

-ri̯- has been thought to become *-i-* in *peiero* for *peri̯ero*, but this is very doubtful. A later theory is that *peiero* (for *peies-o*) is formed from the comparative *peior*, against which

it may be said that verbs formed from comparatives do not occur till late in Latin.

-ln- becomes *-ll-* in *collis* : κολωνός (κολ̥νος)—*pullus* : πελλός, Cyprian πιλνός— *-cello* : Sanskrit *çrṇáti*.

Where *-ln-* occurs, some intermediate sound has been dropped, as in *ulna* : ὠλένη (where ϵ is a *svarabhakti* vowel), *alnus* for *alsnus*.

-mn- does not become *-nn-* or *-n-* (cf. p. 215). *novēni* is rather an analogical form than directly for *novem-ni*.

-nl- becomes *-ll-* in *homullus* (*homon-lus*), *ullus* (*un-lus*), *Marullus* (cf. *Maro*), *Messalla* (cf. *Messana*).

-nm- becomes *-mm-* in *gemma* (√*gen*).

-rl- becomes *-ll-* in *agellus* (*ag-e-r-lus*), *stella* (*ster-la*, cf. ἀ-στήρ), *pullus* (pure), cf. *pur-us*.

Note that *pullus* (black) is for *pul-nus* (πελλός) and *pullus* (young) for *put-lus* (cf. *putus*, *putillus*).

Between two liquid or nasal sonants tenues change to mediae, as in *singuli* for *sm̥-kl̥o-*, *nongenti*, *septingenti* for *neu̯n̥kn̥to-*, *septm̥kn̥to-*.

C. Final combinations.

Final combinations with semivowels are simplified to a single consonant, thus *far* for *farr* (cf. *farris*). So we have *cor* for *cord*, *topper*, *antioper* for *-pert* (afore-times), cf. Osc. *petiro-pert* (four times), so with all adverbs in *-per* (*Archiv für Lat. Lexicogr.* i. 102).

In *fert* for *fer-ti* the *t* is perhaps not really final.

Before dental spirants a semivowel is lost, as in *dies* for *dieu̯s* (cf. Ζεύς), *res* for *rei̯s* (Sanskrit *rayas*), *agros* for *agro-ns*, *quoties* for *quotiens* (which is also found).

But the combination *-nts* becomes *-ns*, as in all pres. participles, to which we may perhaps add *trans*, which may be a participle (cf. *in-trare*).

The exception in *hiems* (not *hies*) may be explained as due to the analogy of the oblique cases (cf. p. 305).

Also the combinations *-nds*, *-rts*, *-rds*, *-lts* lose the mute, as in *frons*, *ars*, *concors*, *puls*. On the other hand *-ncs*, *-lcs*, *-rcs* remain unchanged, e.g. *conjunx*, *falx*, *arx*.

Dissimilation of liquids. It may be well to notice here cases where consonants not in immediate juxtaposition nevertheless modify one another.

The most interesting case is that of the interchange of the liquids *l* and *r* in successive syllables. These two sounds tend to alternate with one another in suffixes according to very definite rules. Where the body of the word contains an *l*, the suffix will appear with the liquid *r*, where, on the other hand, the stem has an *r*, the suffix takes the liquid *l* (Havet, *Mém. Soc. Ling.* vi. 27; *K. Z.* xxvii. 113; Brugmann, *Grundr.*, p. 219).

Thus the suffix *-alis* appears in its normal form in *fatalis*. But where the root contains *r*, we find instead *-aris*, thus *altaria*, *exempl-aris*, *consul-aris*, *salut-aris*, *vulg-aris*, *lupan-ar*, *pulvin-aris*, *palatu-ar*, *line-aris*, etc.

So too 'Αλαλία and *Aleria*, *coelum* and *coer-uleus*, *Pales* and *Parilia*, *largus* (*dl̥̄ghós* with *d* becoming *l*) and δολιχός.

The same rule governs the alternations of *-c(u)lum* and *-crum*, thus *ambula-crum*, *simula-crum*, *sepul-crum*, *lava-crum*, *lu-crum* (λύ-ω), *involu-crum*, but *ludi-cer* (beside *ridi-culus*, cf. *pul-cer*). Again we have *scalp-rum*, *flag-rum* beside *capulum*, *jaculum*, *vinclum* beside *fulcrum*, *labrum* beside *capitulum*, etc. So also *delu-brum*, *candela-brum*, *Vela-brum*, *pollu-brum*, *lava-brum*, but *pa-bulum*, *vesti-bulum*, *sta-bulum*, *tri-bulum* (yet *concilia-bulum*).

The suffix *-bra* does not however seem to change; cf. *terebra*, *scatebra*, *vertebra*, *latebra*, *palpebra* (also *palpetra*), *dolabra*, *salebra*, *illecebra*.

Among verbal forms we may notice *flag-ro* but *postulo*, *blaterare* but *gratulari*, *latrare* but *ambulare*.

Where however an *r* intervenes between two *l*'s, both *l*'s are kept (*lateralis*, *Lupercal*), and no dissimilation takes place between two *r*'s (*cerebrum*, *feretrum*, *aratrum*). Forms violating the law (*Palatualis*, *legalis*, *Latialis*, *letalis*, *latibulum*) may be taken as newer formations.

An absolute loss of the liquid by dissimilation occurs in *praestigiae* (√*strig*, *stringo*), *fragare* beside *fragrare*, etc.

Loss of a syllable. Another noticeable instance of the tendency to dissimilation resulting in the loss of a sound is the case where one of two successive similar syllables is completely lost. Thus we have *calamitosus* for *calamitatosus*, *nutricis* for *nutri-tricis*, *veneficium* for *veneni-ficium*, *debilitare* for *debilitatare*, *hereditarius* for *hereditat-arius*, *antestari* for *ante-testari*, *trucidare* for *truci-cidare*, *dentio* for *denti-tio*, *homi-cidium* for *homini-cidium* (but cf. p. 304), *voluntas* for *volenti-tas* (if not assimilated to *voluptas*), *scilicet*, *ilicet*, *videlicet* for *scire-licet*, etc.

Assimilation of labials and velars.

Cases of the assimilation of consonants not in juxtaposition are less common. It is however certain that *quinque* stands not for *qenqe* but rather for *penqe*. The initial labial is vouched for by all Indo-European languages, and the guttural in Latin is due merely to that in the succeeding syllable, unless indeed the initial sound of *quattuor* has affected it. Similarly *coquo* is primarily for *quequo* and this for *pequo* (*peqo*, cf. Greek πέσσω). *Popina*, *popa*, where the guttural has been assimilated to the labial, are probably Italian rather than Latin words, the true Latin form of the former being *coquina*.

A case of assimilation of the second sound to the first occurs in *prope*, whose guttural appears in *proximus*. The word would seem to be the same as Greek πρόκα in the Herodotean formula καὶ πρόκα τε.

In every case the guttural is a velar, not a palatal. We are perhaps justified in laying it down as a law, that wherever a velar and a labial occur in Latin in the same word, one is assimilated to the other. Hence we get yet another explanation of *bos*, whose *b* (Indo-European *g*) may possibly have originated in the dat. plur. *bobus* (for *gou̯-bus*). So *vulva* is written in the MSS. *bulba* and stands for Indo-European *gelbh-* (βρέφος). The same law holds good in the Celtic languages (cf. Old Irish *cóic*, Cymr. *pimp*, Indo-European *penqe*; Cornish *popei*, Cymr. *popuryes*, Indo-European √*peq*) and forms a fresh argument for the close connexion of the Italic and Celtic families.

CHAPTER X.

ABLAUT OR VOWEL-GRADATION.

The meaning of Ablaut.

ABLAUT or Vowel-gradation is the general name for all differences of quantity, quality, and accent of the sonant element in any syllable of a root or suffix, which do not originate at the time of the separate development of the individual Indo-European languages, but are due to distinctions existing already in the primitive language. The conception of Ablaut has revolutionized the whole theory of the growth of the Indo-European languages and of their systems of inflexion. It is of special importance in regard to the theory of roots.

The nature of Roots.

By a root is usually understood that element of unity common to a related group of words, which is obtained from them by abstraction, whether in a derived or in the original language. When and under what circumstances roots were used as words we cannot determine. The derived languages are, as we assume the parent speech to have been, inflexional, and the radical element is not found existing as a separate word but is only obtained by abstracting that element which is common to a related group. But the question arises, upon what principle the root is to be assumed, whether in a derived or in the original language; and how far does such a root serve the purpose of illustrating the element of unity common to a group of related words.

In dealing with this question we are at once confronted with grave difficulties. For instance in the Greek language, if we take the groups *βάλλειν*, *βολή*, *βέλος*, *βαλεῖν*—*στέλλω*, *στολή*, *σταλῆναι*, we shall find that the roots usually given in dictionaries and grammars are √*βαλ* and √*στελ*. But these roots are merely in each instance the bases of the present stem of the verb and do not provide us with an element common to all the connected words.

From √*βαλ* we cannot at once get *βολή* and *βέλος*, nor from √*στελ* can we get *στολή*: and if we say that the form *στελ* must be prior to the form *στολ*, simply because it occurs in a greater number of related forms, we resign all hopes of discovering any fundamental unity.

Again in the groups—

ϝοῖδα	*ϝείδομαι*	*ϝίδμεν,*
εἰλήλουθα	*ἐλεύ(θ)σομαι*	*ἤλυθον,*
σωρός	*σεσᾱρώς*	*σεσᾰρυῖα,*

the roots ordinarily given would be √*ϝιδ*, √*ἐλυθ*, √*σᾰρ*, which are the weakest forms under which the root in each instance appears. By the same process

from *δέρκομαι*, *δέδορκα*, *ἔδρακον* we should get a √*δρακ*.

πέτομαι, πότμος,	*ἐ-πτ-όμην*	√*πτ*.
ἕπομαι	*ἑ-σπ-όμην*	√*σπ*.
ἔχω	*ἔ-σχ-ον*	√*σχ*.
τέμνω, τομή	*ἔ-τε-τμ-ον*	√*τμ*.
φόνος	*ἔπε-φν-ον*	√*φν*.
εἶ-μι	*ἴ-μεν*	√*ἰ*.
eram (for es-am)	s-umus	√*s*.

Most of these roots are necessarily unpronounceable, and it is inconceivable that they should ever have existed as actual words; but they might be accepted as mere abstractions, if it could be shown that they were really the characteristic elements of the groups of words to which they belong. But in the case of the √*φν* we find by the side of *ἔπε-φν-ον* in Homer *πέφαται*, *ὀδυνή-φατος* and also probably a present *θείνω* for *θενι̯ω*, where, as has been shown above, *θ* represents the original velar guttural before the palatal vowel *ε*. It is clear that a √*φν* fails to account for these forms.

Again in the series *γόν-ος*, *γέν-ος*, *γί-γν-ομαι*, *γε-γά-ασι*, in what sense can a √*γεν* be considered as characteristic of the series? The same difficulty arises in the case of *μέμονα* and *μέμαμεν*, *μίμνω* and *μονή*, *τείνω*, *τόνος* and *τατός*.

Vowel-intensification.

These anomalies were formerly explained by the theory of vowel-intensification,—a theory derived from the Sanskrit grammarians, who call such intensification '*guṇa*.' According to this theory the Sanskrit vowels *a*, *i*, *u*, *ṛ*, *ḷ* could be 'gunated' by the addition of the vowel *a*. Thus the guṇa of *i* would be *a* + *i* = Sanskrit *e*, and this in turn was still further intensified by the addition of a second *a*, so that we get *a* + *a* + *i* = *āi*. This second amplification is known as the *vṛddhi* of *i*.

Acting on this hint, the earlier philologists, especially Schleicher, constructed a table of vowel-intensification for Greek and Latin.

An A scale by which in Greek *α* was raised first to *ᾱ* or *η*, e. g. *λακ*, *λέλᾱκα*—and *ε* was raised to *ο*, e. g. *γεν*, *γονή*, *γέγονα*: secondly to *ω*, e. g. *ῥήγνυμι*, *ἔρρωγα*.

An I scale by which *ι* was raised first to *ει*, secondly to *οι*, e. g. *λιπ*, *λείπω*, *λέλοιπα*.

An U scale by which *υ* was raised first to *ευ*, secondly to *ου*, e. g. *ἤλυθον*, *ἐλεύ(θ)σομαι*, *εἰλήλουθα*.

But this theory can only be applied to cases in which forms with a short vowel or semivowel exist side by side with fuller forms. From √*λιπ* in *ἔλιπον* it may be possible by vowel-intensification to arrive at *λείπω* and *λέλοιπα*, from √*φυγ* in *ἔφυγον* at *φεύγω*. But in cases like *ἔ-σχ-ον* beside *ἔχω*, *ἕξω* (for **σέξω*), and *ἐκέ-κλ-ετο* beside *κέλ-ομαι*, no amount of vowel-intensification can produce a vowel where a vowel does not exist.

Guṇa in Sanskrit.

In Sanskrit *r* and *l* are still recognised as vowels and have their proper *guṇa ar*, *al*, and thus √*dṛk* could be intensified to *dark*: but is it possible in Greek to regard *δέρκ-ομαι*, *δέδορκα* as gunated or intensified forms of √*δρακ* which appears in *ἔδρακον*? And are *βολή*, *βέλος* gunated from the √*βαλ* in *βάλλω*? Is it possible that mere intensification of sound can produce a vowel which is totally different in character?

But the *guṇa* theory breaks down even in Sanskrit in the case of roots containing a nasal. For here we meet with forms that apparently have lost the nasal altogether, and we find *mata*, *tata* by the side of the roots *man*, *tan*. By what process of vowel-intensification is it possible in Sanskrit to produce *man* from *ma-ta* or in Greek to get τεν in τείνω (for τενι̯ω) from the unnasalised form τατός? The process is only explicable on the hypothesis of nasal sonants, but the existence of such sounds was unknown to the supporters of the *guṇa*-theory. We have, however, already seen that in words like ἔπαθον, τατός, etc., the α represents an original nasal sonant, and that in e.g. ἔδρακον the ρα is the Greek amplification of the original liquid sonant r̥. In these instances, therefore, it may be just possible to admit the *guṇa*-theory, the liquids or nasals in these groups playing precisely the same part as the semivowels in the roots πιθ, πυθ.

Thus we may compare the series—

ἔδρακον	δέρκομαι	δέδορκα,
ἔταμον	τέμνω	τομή,
with—		
ἔπιθον	πείθω	πέποιθα,
ἤλυθον	ἐλεύ(θ)σομαι	εἰλήλουθα.

In each case the first column shows the pure sonant or semivowel, the second its *guṇa*, formed by the addition of ϵ, the third its *vṛddhi* formed by adding ο.

But in the case of roots not containing a sonant or semivowel, what are we to say? We have seen that the weakest form of the roots of πέτομαι, ἔχω, εἶ-μί (=ἐσ-μι) are πτ, σχ, σ. By what process can these be gunated or intensified to πετ, ποτ, σεχ, ἐσ, as the phenomena of the language require?

Curtius' theory of roots.

It is in fact in the case of roots of this class that the theory of vowel-intensification breaks down. A signal instance of its failure is to be seen in Curtius' *Greek Etymology*. Curtius theoretically sets before himself, the aim of arriving at a root which shall be the ideal unit of a group of related words: but in practice he is reduced to accepting double roots such as κελ, καλ : βελ, βαλ : τρεπ, τραπ, etc. (*G. E.* p. 54). The only principle by which the priority of one form over another can be determined is the purely empirical one of supposing that form to be most original which appears in the greatest number of the related words, and even this leads to difficulties such as that of supposing βαλ to be the root of ἔβαλον, but στελ that of the similar form ἐστάλην.

The original vowels.

The question cannot be solved without an enquiry into the number of the original vowels. Curtius' theory of the priority of the *a* and its 'splitting' into the later sounds *e* and *o* has been already stated (p. 56), and we have seen good reason for rejecting this view and holding that the original language possessed all three vowels *a*, *e*, *o*, the two last of which, however, have no distinct written symbol to represent them in Sanskrit.

Now roots containing the semivowels *i*, *u* can, as far as graphic representation goes, have only one development in Sanskrit, inasmuch as there is only one vowel, *a*, to be prefixed. The fuller form, therefore, of √*ric* can in Sanskrit only be √*rec* (=*raic*). In Greek, however, where ε and ο are kept distinct, we get beside λιπ the two forms λειπ and λοιπ. With this triple gradation or Ablaut the facts of Sanskrit are not really inconsistent; *raic* in that language represents both λειπ and λοιπ, and we are therefore justified in supposing, the facts of kindred languages being consistent, that this triple Ablaut is primitive, and represents a phenomenon which existed in the original Indo-European language.

New theory of roots.

Let us now state the more recent view of the nature of roots which has superseded that of Curtius.

Roots present themselves to us under two main forms, the full or strong form, and the reduced or weak form. In the great majority of cases moreover the full form in its turn exists in two different shapes, one containing the vowel *e*, the other the vowel *o*.

Classification of roots.

Roots may be conveniently divided into three classes:—

I. Roots which terminate in a semivowel (*i*, *u*) or in a nasal or liquid (*m*, *n*, *r*, *l*).

II. Roots containing a semivowel, nasal, or liquid followed by a consonant.

III. Roots not containing a semivowel, nasal, or liquid, and ending in a consonant.

Those roots which do not contain a semivowel, liquid, or nasal, and which do not end in a consonant (e.g. in Greek *θη, στᾱ, δω*) may be for the present ignored.

Now all the roots which admit of the above classification contain in some of their forms the vowel *e*, and are then said to be strong or full roots. In other forms, however, this vowel is expelled, and they are then called weak or reduced roots.

As soon as the theory of nasal and liquid sonants is admitted, it becomes at once clear that these sounds (*r*, *l*, *m*, *n*) play exactly the same part in derivation and inflexion as the semivowels *i*, *u*. The full form of a root containing any one of these sounds will also contain an *e*, as e.g. *πευθ*, *δερκ*. The reduced form will expel the *e* and we shall get e.g. *πυθ*, *δρκ*, which last is written in Greek *δρακ*, the liquid becoming sonant before the consonant. In the full form the semivowel or liquid is consonantal, having no sound of its own apart from the vowel *e*; in the reduced form the semivowel or liquid becomes sonant and acts as a full vowel. We are therefore justified in giving the following proportion, *πευθ* : *πυθ* = *δερκ* : *δρακ* (*δρ̥κ*).

But in precisely the same way we have, in Class III, the full root *πετ*, the reduced root *πτ*, the last being only pronounceable and therefore only appearing before a vowel (*ἐ-πτ-ό-μην*). We may therefore say:—

πεύθ-εται : *ἐ-πυθ-όμην* = *πέτ-εται* : *ἐ-πτ-όμην*.
= *δέρκ-ομαι* : *ἔ-δρακ-ον* (*ἔ-δρ̥κ-ον*).

The parallelism of the liquids and nasals with the semivowels is further exemplified by the absence of any roots containing *in*, *un*, *im*, *um*, *ir*, *ur*. For *i* and *u* are not vowels in the same sense as *a*, *e*, *o*: like *m*, *n*, *l*, *r* they are merely 'coefficients,' as they have been called, of the vowels proper, and only one may succeed the vowel in the root. We may have roots of the form *πευθ*, but not of the form *πιν*, *πυμ*.

The relation of the two forms *πευθ*, *πυθ* is not to be explained, as by Schleicher, by saying that the former is a 'dynamical intensification' of the latter, an alteration made for the purpose of expressing changes in meaning, as e.g. between the present *πεύθομαι* and the aorist *ἐπυθόμην*: rather the reduced form of the root is to be considered as parallel to the fuller form, the variation being connected with change of accentuation. Where the accent rests on the root we have the full form, e.g. *πείθων*, where it shifts to the termination, we have the reduced form as in *πιθών*. But it is only in comparatively few cases that the accent as we find it in Greek or any other derived language offers an adequate explanation: and to understand the law, accent must be taken to mean the original Indo-European accent, which has been most closely preserved in Sanskrit (v. Chapter xi).

Vowel-gradation in roots.

We may proceed to illustrate the law of vowel-gradation in roots as follows. In non-thematic presents (i. e. those presents in which the termination immediately follows the root without the intervention of a connecting vowel), we find a variation between the full and reduced forms of the root which is determined by the 'weight' of the inflexional termination. The terminations of the singular are 'light,' and in this case we get the full form of the root, and the root is accented. The terminations of the plural are 'heavy,' and we get the reduced form of the root with the termination accented.

Thus *εἶ-μι* Sanskrit *é-mi* plural *ἴ-μεν* Sanskrit *i-más*.
ἵστη-μι *ἵστᾰ-μεν*.
πίμπλη-μι *πίμπλᾰ-μεν*.

In the two last instances the shortening of the long vowel in the reduced form corresponds to the loss of *ε* in *ἴ-μεν*.

es-t Sanskrit *ás-ti* s-unt Sanskrit *s-ánti*.
ἐσμέν sumus *s-más*.

Again in the perfect the evidence of all the related languages goes to prove that originally the singular had the full form of the root with the accent on the root, while the other numbers showed the weak form with the accent on the termination.

Thus from the root *bheugh* Sanskrit √*bhuj* we have—
Sanskrit sing. (*bu-bhoja*) plur. *bu-bhuj-imá*.
Gothic *baug* *bug-um*.

From the root *vert*, Sanskrit √*vṛt* (turn).

Sanskrit sing.	*vavarta*	plural	*va-vṛt-imá*.
Gothic	*varþ*		*vaurþ-um* (where *aur* = *r̥*).

In Greek the form of the singular has gradually encroached on the plural, but in Homer we find instances surviving of the original formations, e. g.:—

sing.	*πέ-ποιθ-α*	plural	*ἐ-πέ-πιθ-μεν*.
	ἔ-οικ-α		*ἔ-ικ-τον*.
	μέ-μον-α		*μέ-μα-μεν*.
	οἶδ-α		*ἴδ-μεν*.

Fuller instances of this and similar alternations will be given later on.

So far we have considered the alternation of the full and reduced forms of roots. But we saw above that the full root itself appears under two forms, one showing the vowel *e*, the other the vowel *o*. It remains to consider the relation between these two forms.

By the theory of vowel-intensification, as stated by Schleicher, a form like λοιπ in λέλοιπα is considered as a raising of the form λειπ in λείπω. There is, however, no ground for supposing any priority of one form over the other. Each type is peculiar to certain special inflexional formations, the form with *e* (e.g.) to the present, that with *o* to the perfect indicative, and there is no reason to suppose that the present is less or more original than the perfect; both have continually coexisted side by side, and any support that may have been given to the intensification theory by the supposed development of the *o*-sound from the *e*-sound is destroyed by the proof of the original existence of both sounds, which we have given above.

In the present state of our knowledge we can give no certain explanation of the alternation of *e* and *o*. A difference of pitch has been suggested as the cause of variation, but this has never yet been proved. All that we can say is that in certain formations now one vowel appears, now the other, according to fixed rules; but any explanation such as was possible in the case of the reduced roots is at present unattainable. The two must for practical purposes be ranked together as parallel forms, neither having a claim to stand forth as the one root or unity of the group of words in which they appear, to the exclusion of the other.

Reduced root.

And indeed much the same may be said of the relation of the reduced to the full forms of the roots. We have spoken of the reduced forms as originating in the expulsion of *e* from the strong forms, but this, though convenient in explaining the theory, is not strictly correct. We need not suppose that the reduced root is of later origin than the strong roots. Like them it appears from the first in certain definite formations under definite rules, and as such must rank as original and primitive. The appearance of the weak root is accompanied by a change of accentuation, for its occurrence is accompanied by a shifting of the accent from the radical syllable to the termination. Apart from any assumption of the priority of the full roots, it will be convenient to speak of roots, which have not the *e* or *o* of the full form, as weak or reduced roots.

Three forms of the root.

It is clear that the theory stated above is inconsistent with any attempt to regard the root as a single unity common to a group of related words, and we must rather suppose that the root exists from the first in three distinct forms, two of which are strong, the third weak. This complete Ablaut or gradation of three sounds does not, however, exist in all cases, and not in all of those which exhibit the alternation of *e* and *o*.

In the case of other groups of words we can only discover two roots, the strong root characterised by a long vowel (*θη, στᾱ; δω, λᾱθ*), and the weak root characterised by a short vowel (*θε, στᾰ, δο, λᾰθ*). But it is to be noticed that this Ablaut is governed by precisely the same laws as those given above. Thus the alternation in—

τί-θη-μι	*τί-θε-μεν,*
δί-δω-μι	*δί-δο-μεν,*
ἵστᾱ-μι	*ἵστᾰ-μεν,*

is clearly completely analogous to that in *εἶ-μι, ἴ-μεν, es-t, s-unt.* And again the Ablaut *λάθ-ομαι : ἔλᾰθ-ον* is parallel to that in *πεύθ-εται : ἐπῠθ-όμην.* The only difference is that the Ablauts belong to a different series,—*πεύθεται* to what is known as the *ĕ*-series, *ἵστᾱμι* to the *ā*-series, *δίδωμι* to the *ō*-series, *τίθημι* to the *ē*-series. This will be illustrated below at greater length.

Before passing on, we may notice a class of forms which seems at first sight to contradict the theory given above.

Aorist-presents.

In verbs belonging to what in Sanskrit grammar is called the first class, i.e. those in which the stem of the present tense is identical with the verb-stem, we find a divergence of treatment in Greek. In the case of roots belonging to the *ĕ*-series the thematic presents of this class regularly contain *ε*, and we have, e.g. *λέγω*, *τρέμω*, *φέρω*, *φεύγω*, *μένω*, *στείχω*, etc. Similarly in Latin we have *lĕgo*, *fĕro*, *tĕro*, *trĕmo*, etc., and in Gothic corresponding forms in *i*, *giba*, *sniva*, *nima*, *steiga*, etc. In Sanskrit the corresponding forms show of course an *ă* (*bhárāmi*)[1].

Corresponding to these, in thematic presents of the *ā*-, *ē*-, or *ō*-series we get in Greek, e.g. *θάγω*, *λάθω*, *κάδω*, *λήγω*, *φώγω*, etc.

But side by side with these are a group of presents, apparently of the first class, which show *ă*, *ŏ*, e.g. *ἄγω*, *γράφω*, *γλάφω*, *μάχομαι*, *ἄχομαι*, *βλάβομαι*, *ὄθομαι*. In Latin we get the corresponding types *ăgo*, *căno*, *scăbo*, *cădo*, *ălo*, *tăgo*, *păgo*, *scăto*, *ŏlo*, *lŏquor*, in Gothic forms with *ă* (*draga*, *hlaþa*, *skaba*, *þvaha*).

Comparing these two types, we get on the one hand Sanskrit *bhárāmi*, Greek *φέρω*, Latin *fero*, Gothic *baira*; on the other, Sanskrit *ájāmi*, Greek *ἄγω*, Latin *ago*. As the first type answers to an Indo-European *bhérō*, the second should answer to an Indo-European *ắgō*.

De Saussure, however (p. 159 sqq.), comparing the isolated aorist forms *μακεῖν*, *ταφεῖν*, *φαγεῖν*, *φλαδεῖν*, is of opinion that in these presents quoted above the root appears in a reduced form: that the true present of the root *'ăγ-* is *'āγ-*, which may appear in ʽᾱγέομαι, and that the form with the short vowel, ᾰ́γω, is a present formed from the aorist stem, which has supplanted the true present with a long vowel (ᾱ́γω). As then φέρω corresponds to an Indo-European *bhérō*, so ᾱ́γω would be represented by a form *ā́gō*, which has, however, completely disappeared.

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[1] De Sauss., *Mém.* p. 159; Osthoff, *Z. G. d. P.* p. 116; Brugmann, *Zum heut. Stand der Sprachw.* p. 112.

But if these presents show the reduced root of the aorist stem, we should expect that the accent would fall not on the root, but on the termination, and this is borne out by the facts of Sanskrit. We have there two classes of verbal themes, the first with the full root and the accent on the root (paroxytone), e.g. *bhárāmi* (Indian first class), the second with the reduced root and the accent on the termination (oxytone), e.g. *viçámi* (Indian sixth class). This latter class of themes existed in the original Indo-European language side by side with the former. In Sanskrit and Zend they have produced both present and aorist forms. In Greek there are no oxytone presents; oxytone verbal themes are only found in the aorist. But it is to be observed that verbal themes with the reduced root, when no form with a strong root exists side by side with them, bear in all save accentuation a close resemblance to the aorist type. Thus by the side of γλῠ́φειν, κλῠ́ειν, λῐ́τεσθαι, στῐ́χειν, which are classed as presents, we have the isolated aorist forms δῐκεῖν, ἐλ(ῠ)θεῖν, μῠκεῖν, στῠγεῖν, βραχεῖν (βr̥χεῖν).

The result seems to be that the Greek and Latin presents of the type *ăgo*, ᾰ́γω should be considered in connexion with the isolated aorists of the same type. They agree with the aorist in exhibiting the reduced root and only differ in the accentuation. It is probable therefore that they were originally formed from the aorist stem and were once oxytone, but have in process of time taken the accent of the ordinary presents formed with strong roots. It is just as though, by a contrary process, ἐλ(υ)θεῖν were to change its accent and approach to the present type ἔλ(υ)θειν[1]. The same explanation will hold good of the Latin forms like *cădo*, *ăgo*, *tăgo*, *păgo*, etc. (cf. the strong root in *com-pāg-es*).

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[1] In γεν-έσθαι and ἐλ-ών the converse has actually taken place, for these words, though belonging to the aorist type by accentuation and meaning, yet have the full form of the root as in the present stem.

We are therefore justified in assuming in the case of these aorist-presents, as they may be styled, another form (known as the imperfect-present) exhibiting a full root, and the Ablaut *ā́gō* : *ăgṓ* will be precisely parallel to the Ablaut λᾱ́θω : λᾰθεῖν.

This theory of De Saussure has been accepted by Osthoff (*Z. G. d. P.*, p. 116). Against it Hübschmann (*Das Indogermanische Vocalsystem*, p. 3) argues that an aorist-present of the type *ăgṓ* would be represented in Sanskrit by **ijami* rather than **ajami*, and that therefore the aorist-present must be represented in Indo-European rather by *ắgō* than by *ăgṓ*, and would substitute for the aorist present *ăgṓ* and the imperfect-present *ā́gō* the two types *ắgō* and *ăgṓ*, corresponding respectively to a Sanskrit **ajā́mi* and *ijā́mi*.

Two forms of reduced roots.

So far then we have three degrees of Ablaut, two strong and one weak. But further, there is reason to believe that reduced roots, as well as the strong, appear in two distinct forms. In the case of words exhibiting a reduced root containing a semivowel or liquid or nasal sonant, we find a variation of quantity of the root syllables extending throughout the whole of the Indo-European languages, which must therefore be supposed to represent an original variation. In Greek alone, for example, we get the same reduced root under no less than four different forms in φῦ-μα, φῠ́-σις, ἐ-φύϝ-ην, ὑπερ-φϝ-ίαλος. The discussion of this subject is reserved for the appendix to this chapter: it will be sufficient, here to state the results of the investigation.

The secondary accent.

In every reduced root containing a semivowel or liquid or nasal sonant, the semivowel or sonant may be either long or short. This difference of quantity was originally determined by the absence or presence of a 'secondary accent' (*nebenton*) on the root. The root, when reduced, in no case bore the main accent (*hochton*), but, according to the position of the syllable in the sentence, it might acquire a secondary accent which was weak as compared with the accent proper, but strong as compared with a syllable altogether unaccented. As in the case of a polysyllabic word like *còntemplátion*, the first syllable, though not bearing the main accent, is, by virtue of its position at the beginning of the word, pronounced with an emphasis which is strong as compared with that on the next two syllables, though weak as compared with that on the penult, so in the Indo-European *k̂rudhí* the first syllable will bear a secondary accent when the word occurs at the beginning of a clause or verse, which will be absent when it comes in the middle of a sentence. In the first case, then, the semivowel will be long, in the second case it will be short. The first case will be represented by the Greek *κλῦθι*, the second by the Sanskrit *çrŭdhí*, the Greek having extended to all cases one variety, the Sanskrit having extended the other.

Reduced roots with semi-vowel.

In the case, therefore, of reduced roots containing a semivowel or liquid or nasal sonant, we may conclude that there are two degrees of the Ablaut, one with a secondary accent (*nebentonig*), which we may call Ablaut III, and which has the semivowel long (*ī*, *ū*, *r̥̄*, *l̥̄*, *m̥̄*, *n̥̄*), the other altogether unaccented (*tonlos*, Ablaut IV) and with the semivowel short (*ĭ*, *ŭ*, *r̥*, *l̥*, *m̥*, *n̥*). There is also some evidence that there was the same variety of the reduced root in the case of words not containing a semivowel, Ablaut III showing a vowel of some sort in the root, though the root is not accented, Ablaut IV having no root-vowel at all. We have, for instance—

	ABLAUT III.	ABLAUT IV.	
√*ped-*, *pod-*	Sk.gen. *pad-ás*, I.-E. *pəd-ós*,	*pd-*	Zend *fra-bd-a.* Gk. *ἐπί-βδ-αι.*
√*ed-* *əd*	Sk. 2 plur. imperf. *attá*, I.-E. *əd-té*	*d-*	Gk. *ἄρι-σ-τον* for *ἀρι-δ-τον*
√*sneigh-* *snīgh-*	*νίφει*,	*snĭgh-*	*νίφα.*
√*bheu̯-* *bhū-*	*φῦ-μα*,	*bhŭ-*	*φῠ́σις.*
√*ster-* *str̥̄*	*στρω-τός* *strā-tus*	*str̥-*	*στρατός.*

But further, we have seen in the case of the short semivowels and liquid and nasal sonants that they are sonant only before consonants, but consonantal before sonants. The long sonants and semivowels, similarly, have corresponding consonantal forms, viz. *ii̯*, *uu̯*, *r̥r*, *l̥l*, *m̥m*, *n̥n*. In the case, therefore, of roots containing these letters, we must subdivide further as follows: —

	Ablaut III.		Ablaut IV.	
	1. before sonants.	2. before consonants.	1. before sonants.	2. before consonants.
√bheu-	*bhuu̯-*	*bhū-*	*bhu̯-*	*bhŭ-*
	ἐ-φῠ́ϝ-ην	φῦ-μα,	ὑπερ-φϝ-ίαλος	φῠ́-σις.
√ster-	*str̥r-*	*str̥̄-,*	*str-*	*str̥-.*
	Sk. *ti-stir-ĕ́* (perf. mid.)	στρω-τός,	*str-uo*	στρα-τός.

In roots which do not contain a semivowel, the two degrees of the reduced root are not distinguishable. Thus the present ἄγω with the reduced root of an aorist stem, as explained above, belongs to Ablaut III. The participle ἔπακτος belongs, under ordinary conditions, to Ablaut IV, but in form does not differ from Ablaut III, because a form like ἐπι-κτός (which would be the more regular formation) would not be recognizable as belonging to the same verb.

Again, in cases where Ablaut II contains *ĕ* not accompanied by a semivowel, this *e* cannot disappear before a consonant in Ablauts III and IV. In Ablaut III, for instance, we can have nothing but σκεπτός and *sessus* (*sed-tós*) from the roots σκεπ-, *sed-* with Ablaut II, and in Ablaut IV σκπτός would be unpronounceable. In such cases, therefore, there is no difference between Ablauts II, III, and IV.

Where the second Ablaut contains a long vowel (as in the root στᾱ), the distinction between the third and fourth degrees may be preserved. Thus in Ablaut III we get στᾰτός, *stătus*, with the long vowel shortened; in Ablaut IV we get στύω (for στ-τύ-ω) without any vowel at all. The relation of στᾰ-τός to στ-τύ-ω is the same as that e.g. of φῑ-τύ-ω (for φῡ-τυ-ω) in Ablaut III to *fŭ-tu-o* in Ablaut IV. In fact the characteristic of Ablaut IV in all roots is, wherever possible, the complete absence of a vowel.

Ablauts may be classified in six series, according to the vowel that they exhibit in the second Ablaut, which is known as the middle degree (*Mittelstufe*). We shall thus get the six series of the Ablauts of *ē*, *ā*, *ō*, *ĕ*, *ă*, *ŏ*. Under each series we shall expect to find four degrees, but for any root to appear in each of the four degrees is rare.

I. The ē-series.

The degrees of the ē-series are as follows:—

ABLAUT I.	ABLAUT II.	ABLAUT III.	ABLAUT IV.
(*Accented.*)	(*Accented.*)	(*Secondary Accent.*)	(*Unaccented.*)
I.-E. *ō*	*ē*	*ə*	no vowel.
Greek ω	η	*ă* (?), Sk. *ĭ*	„
Latin *ō*	*ē*	*ă*	„
√*dhē*	τί-θη-μι	τί-θε-μεν.	
	ἐτί-θη-ν	ἐτί-θε-μεν.	
	θή-σω	ἔ-θε-μεν.	
	ἔ-θη-κα	θε-ίην.	
	θή-σομαι	θε-ῖμεν.	
	ἀνά-θη-μα	τί-θε-μαι.	
	θή-κη	ἐ-θέ-μην.	
		θέ-το (Sk. *ádhita*).	
		θε-ῖτο.	
		θε-τός (Sk. *hitás*).	
		θέ-μα.	
		θέ-σις.	

In the third Ablaut we find in Greek forms like θετός, where a comparison of the other languages would lead us to expect rather *θατος, as the *svarabhākti* vowel or *schwa* is ordinarily represented in Europe by *ă*, corresponding to a Sanskrit *ĭ*. Thus we have in Latin *cătus*, *dătus*, *stătus*, *sătus*. It is probable that the ε, in θετός and similar forms in Greek, is due to the η of other forms of the verb, just as the parallel form δοτός (Lat. *dătus*) owes its ο to ω in δίδωμι (*M. U.* iii. 101; De Sauss. 145, 179).

Ablaut I appears in Sanskrit 3 perf. *da-dhāu*, and in Gothic *dōms*, A.-S. *dóm*, English *doom*; possibly also in *sacerdōs* for **sacro-dhō-ts*. Ablaut III is seen in e.g. Latin *credĭtus* for

**credătus*, *crédetus*, and possibly in *fa-c*, *făcio* (*Z. G. d. P.* 188).

Ablaut IV does not appear in Greek or Latin, but is seen in many Sanskrit forms, e.g. *da-dh-mási*, *dha-t-thás* (for *dha-dh-tás*), etc.

However *dadhmási* corresponds in almost every way to τίθεμεν, which therefore probably is for τι-θ-μεν, the ε being a *svarabhākti* vowel, which takes that form rather than any other because of η in other forms (compare ἵστημι : ἵστᾰμεν beside τίθημι : τίθεμεν).

θεσμός, Doric τεθμός, Locr. θέθμος, seems to be a reduplicated form for θε-θ-μός. Compare δεσμός = δε-δ-μός.

	I.	II.	III.	IV.
√*sē*				
Gk.	ἀφέωκα ἀνέωνται ἀνἑώσθαι (quoted as perf. forms in Herodian and elsewhere, De Sauss. p. 140).	ἀφ-ί-η-μι ἀφ-ί-η-ν ἧσω, ἧκε, ἕ-η-κε ἧμα μεθ-ή-μων	ἀφ-ί-ε-μεν. ἕ-σαν. ἵ-ε-μαι. ἱ-έ-μην. ἑτός, ἑτεός.	
Lat.		sē-vi sē-men (cf. Germ. *Saat*, Engl. *seed*)	să-tus serimus (for si-să-mos), (*Z. G. d. P.* 245).	sero (for si-s-o).
√*dē*		δίδη (Λ. 105) ἔδησε δέ-δη-κα διά-δη-μα	δέ-δε-μαι. δέ-δε-το. δέ-σις. σύν-δε-τος. δι-δέ-ασι (Xen. *An.* 5. 8. 24).	
√*mē*		mētior	μέτρον.	
√*sphē* A.-S. *spōwan*, Engl. *speed* (where *ē* = orig. *ō*)		spēs (?)	spătium (?).	

	I.	II.	III.	IV.
√*ēgh*		ἠμί (for ἠχ-μί) ἠ-σί (Aeol.). ἦ-ν, ἦ (for ἠκτ). adāgium (*āgh*, with *ā* for *ē* from Abl. III).	aio for ăh-i̯o.	
√*vrēg*	ἔρρωγε ῥωγ-αλέος ῥώξ ῥωχ-μός	ῥήγ-νυμι ῥήξω. ἔρρηξα. ῥῆγμα.	ἐρράγην, ῥᾰγάς may belong either to Ablaut III or IV.	
√ἀρηγ	ἀρω-γή ἀρωγ-ός	ἀρήγ-ειν. ἀρήξειν.		
√(*s*)*lēg*		λήγ-ειν λήξ-ω ἄλ-ληκ-τος	λαγαρός. λαγ-ών. laxus (Engl. *slack*).	
Optative suffix *i̯ē*.		ἔ(σ)-ίη-ν s-iē-m	ε(σ)-ῖ-μεν. s-ī-mus.	
√*rē*		rē-ri	ră-tus. ră-tio.	
√*kēd*		ἐκε-κήδ-ει cēd-o	κεκᾰ́δ-οντο. κε-κᾰδ-ών. cădo(?).	

√*vē*. This seems to be one of those roots (of which there are not a few, Hübschmann, p. 85; De Sauss. pp. 257–270) which in no known form exhibit a true Ablaut, though it is possible that such an Ablaut may have once existed. In Greek we get ἄησι (for ἄ-Ϝη-σι), ἄ-η-τον (αἴητον, Σ. 410, is abnormal), ἀ-ή-μεναι, ἄ-η-το, ἀ-ή-της, in Latin *vēntus*. In Greek we have ἀ-έ-ντες, but here the shortening of the long vowel is not original, but due to the special tendency in Greek and Latin to shorten a long vowel when followed by a semivowel and a consonant (cf. p. 183).

Special cases of irregularity between Greek and Latin are *βᾶ-μεν* beside *bē-tere* (but the connexion is doubtful), *πεντήκοντα* beside *quinquaginta*, *θρᾶνος* beside *frēnum*, etc.

The ā-series.

The typical Ablaut of the *ā*-series is—

	I.	II.	III.	IV.
I -E.	*ō*	*ā*	*ə*	no vowel.
Greek	*ω*	*ā* (*η*)	*ă*	”
Latin	*ō*	*ā*	*ă*	”

√*sthā*	*ἵ-στη-μι*	*ἵ-στα-μαι.*
	στή-σω	*ἕ-στα-μεν.*
	ἕ-στη-σα	*ἱ-στά-ναι.*
	ἕ-στη-ν	*ἑ-στά-ναι.*
	στή-μων	*στα-ίη-ν.*
	σύ-στημα	*στα-τός* (Sk. *sthi-tás*). *στα-τήρ.*
	stāre	stă-tus.
	stātor	stă-tim.
	stāmen	stă-tor.
		stă-tio.
	Cf. Goth. *stolo*, Engl. *stool* (*στήλη*), which may be either of 1st or 2nd degree.	sistimus (for *si-stă-mos*). stetimus (for *se-stă-mos*, cf. *ἕ-στᾰ-μεν*). Cf. Goth. *stands*, (Engl. *stand*), *staths* (*-stath*); O.H.G. *stat* (Engl. *stead*), which seem to be of Abl. III.

Ablaut IV may appear in *ste-ti* by metathesis for *se-st-i* (cf. *de-d-i*) and is certainly seen in Sanskrit *ta-sth-atus*, *ta-sth-ús*, etc.

√*bhā* *φωνή*	*φημί*	*φα-μέν.*
	ἔφη	*ἔ-φα-σκε.*
	προφήτης	*ἔ-φα-το.*
	φῆμις	*φά-σθαι.*
	φήμη	*φά-μενος.*

	I.	II.	III.	IV.
			παλαί-φα-τος.	
			πρό-φασις.	
			φά-τις.	
		fāri	fă-teor.	
		fābula.		
		fāma.		

fātum should rather be **fătum* (cf. *dătum*, *stătus*), but has been assimilated to the first conjugation.

√*gā* or *g$\bar{\underset{\circ}{m}}$*.				
	βωμός	*βίβατι* (3 sing.[1])	*βιβά-ζω*	*βιβάς.* (for *βιβ$\underset{\circ}{\acute{n}}$τs*).
		ἔβη	*βιβάσθων.*	
		ἐβήσετο	*βίβασις.*	
		βέβηκε.		
		ἐπιβήτωρ.		
		βῆμα.		
		βεβηλός.		
√*plāg*		*πέπληγον*	*ἐξεπλᾰ́γη.*	
		πληγή	*ἐξεπλᾰ́γησαν* (may be Ablaut IV).	
		plāga	plango (for *plăg-no*).	
√*sār*	*σωρός*	*σεσᾱρώς*	*σαίρειν,* *σεσᾰρυῖα.*	
√*λāθ*		*λήθει*	*ἔλαθε.*	
		λήσει	*λάθετο.*	
		λήσομαι	*λελαθέσθαι.*	
		λέληθε	*λέλασται,* *λα-ν-θ-άνω,* *ᾰ̓-λασ-τος* (X. 261).	

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[1] *βίβᾱτι* occurs as 3 sing. in a Laconian epigram in Pollux 4. 102, and is an alteration of Curtius for the MS. *βίβαντι*. Osthoff accepts *βί-βαν-τι*, which he conceives to be an alteration of *βί-βεν-τι*, I.-E. *gi-gém-ti* (with a strong root of *ĕ*-series), the *α* of *βίβαντι* being due to that of *βίβατον*, *βίβαμεν*, etc. (where *α* = *$\underset{\circ}{m}$*). The 3 plural would be *βίβαντι*, like *ἵσταντι*. But if the root is *gem*, the third plural should rather be *gi-gm-$\underset{\circ}{n}$ti* = *βί-βμ-αντι*. *βίβαντι* may have followed the analogy of *ἱστάς* (= *ἱ-στᾰ-ντs*), as has been the case in *βιβάς* (*Z. G. d. P.* p. 375 n.).

I.	II.	III.	IV.
√θāγ τεθωγμένος,	θήγει.		
(Doric form in	θῆξις.		
Hesych.).	θηγάνη.		
√τāκ	τήκω	ἐτάκην.	
	τήγανον	τακερός.	
	τηκεδών.		
√*snā*	ναρός	nătare.	
	νâμα	nătrix.	
	νâσος.		
	Nāïás.		
	nāre.		
√*pā*	panis	πατέομαι.	
	pabulum	πανία.	
	pāstor	ἄπăστος.	
	pāvi.		

The last two may belong to the ŏ-series.

√*pāg*	πήγνυμι	ἐπάγην.	
	pāx	pango (for *păg-no*), păc-iscor.	

We may perhaps add—

ō	*ā*	*ă*
ὠκύς, ocior		ăcupedius.
cicōnia		căno.
rōdo	rādo.	
scōpae	scāpus	scăpulae.
ὠμός		ămarus.
λώβη	lābi.	

But in nearly every case it is doubtful whether the word belongs to the *ā*- or *ō*-series. In *ignārus* beside √*gnō* (which is everywhere else invariable) there may be some confusion with the √*gen* or by metathesis *gnē* in e.g. γνή-σιος.

ō-series.

ō-series.

The type is:—

	I.	II.	III.	IV.
Indo-European	*ō*	*ō*	*ə*	No vowel.
Greek	*ω*	*ω*	*a* (?)	„
Latin	*ō*	*ō*	*ă*	„

It will be noticed that here the two first degrees everywhere coincide.

	I or II.	III.	IV.
√*dō.*	*δίδωμι*	*δίδομεν*	Sanskrit *devá-t-ta* =*deva-d-ta.*
	ἐδίδω	*ἐδίδοσαν.*	
	δώσω	*ἔδομεν.*	
	ἔδωκε	*ἔδοτε.*	
	δέδωκα	*ἔδον.*	
	δωτήρ	*ἔδοσαν.*	
	δώτωρ	*δέδοται.*	
	δῶρον	*δοίην.*	
	δῶτις	*δοῖμεν.*	
		δίδομαι.	
		δοτήρ.	
		δόσις.	
		δανείζω.	
	dōnum	dănunt	de-d-i.
	dōnare	dătus	de-d-imus (cf. ste-t-i).
	dōs	dător.	
		datio.	

The *o* in the third Ablaut in Greek is due to the *ω* of other forms, but the proper representative of the *Schwa* is preserved in *δανείζω*, cf. Sanskrit *a-di-ta* =*ἄδοτος.*

√*gō*	*βωτιάνειρα*	*βόσκει.*
	βώτωρ	*βοτόν.*
	συβώτης	*πουλυβότειρα.*

	I or II.	III.	IV.
	παμβῶτις	βοτήρ.	
		βοτάνη.	
		βόσις.	
		αἰγίβοτος.	
		συβόσιον.	
		πρόβατον.	
		πρόβασις.	

Here again the *a* of Ablaut III. is only preserved in πρόβατον, πρόβασις.

√*pō* (drink),	πώνω (Aeol.)	ποτόν	πίνω.
	πέπωκα	πέποται	πίομαι.
	πῶμα	ποτός	πῖθι.
	ἄμπωτις	πόμα	πίσω, πιπίσκω, from a form *p-y-no*, etc., (*K. Z.* xxvii. 420).
	potor	πόσις.	
	potus	πότης.	
	potio	ποτής.	
	poculum	ποτήριον.	
	potare.		

The forms in the fourth column seem to come from the fourth Ablaut of √*pō* increased by *y*. The relation of *bibo*, Sanskrit *píbami* is doubtful. The Ablaut *poi-* (Sanskrit *pāy-ána*) : *pī* will be related as ἐ(σ)-ίη-ν to ε(σ)-ῖ-μεν.

√*pō* (guard)	πῶ-υ	πο-ιμήν.	
	πῶμα	πο-ίμνη.	
√*kō*	cos, κῶ-νος	cătus.	
√τρωγ	τρώγω		ἔτραγον.
	τέτρωκται.		τράγημα.
	τρώξονται.		
√Fωθ	ὠθέω	εἰνοσίφυλλος (=ἐν-Fοθ-σι-φυλλος).	
	ἔ-Fωσε.		

ĕ series.

ĕ-series.

This is by far the most common of all, both in roots and suffixes. The type is:

	I.	II and III.	IV.
Indo-European	*ŏ*	*ĕ*	No vowel.
Greek	*ο*	*ε*	„
Latin	*ŏ*	*ĕ*	„
	ὄχος	ἔχω	ἔ-σχ-ον, σχ-εῖν, ἴσχω (for *si-sgh-ó*).
	ἐποχή		
	ὄχος	ἔχεσφιν (Hesych.).	
	ὀχέομαι.		
	τόκος	ἔτεκον	τίκτω (for τι-τκ-ω).
	τέτοκα.		
	ψόγος	ψέγω.	
		ἀμφι-έπω	ἔπ-ε-σπ-ο-ν, σπ-έσθαι, ἑ-σπ-έσθαι.
	ποτή, πότμος	πέτομαι	πτ-έσθαι, ἐ-πτ-όμην, πι-πτ-ω.
	φόβος	φέβομαι.	
	ὄψ	ἔπος.	
	πόπανον	πέσσω (for πεq̯ι̯ω).	
	ὄργανον	ἔργον.	
	σκοπός	σκέπτεσθαι.	
	λοπός	λέπω.	
	ῥόϜος	ῥέϜω	ἐρρύην(=ἐ-σρϜ-ην).
	χοϜή, οἰνο-χόϜ-ος	χέϜω	κέ-χυ-ται.
	θοϜός	θέω.	
	δέδορκε	δέρκομαι	ἔδρακον, δράκων.
	φόρος, φορέω, φόρτος	φέρω.	
	ἀγορά	ἀγέροντο	ἀγρ-όμενος, cf. ὁμή-γ-υ-ρ-ις.
	ἀστεροπή		ἀστράπτειν.
	δρόμος, δέδρομε		ἔδραμον.
	βρόμος	βρέμω.	
	δορά	δέρω	δεδαρμένος.
	ὀροφή, ὄροφος	ἐρέφω.	

I.	II and III.	IV.
πτόρος		ἔπταρον.
τροπέω, τρόπος, τροπή, τέτροφα	τρέπω	τετραμμένος, τραπέσθαι.
διέφθορα, φθορά, φθόρος	φθερῶ	φθαρῆναι, ἐφθαρμένος.
ἐγρήγορε	ἐγερῶ	ἐγρέσθαι.
Ἱππημολγοί	ἀμέλγω.	
βολή	βέλος	βαλεῖν, βάλλω.
λόγος, συλλογή, εἴλοχα	λέγω.	
λόχος, ἄλοχος	λέχος.	
μολπή	μέλπω.	
κλοπή, κέκλοφας	κλέπτω	κλαπέντες.
βουκόλος	κέλεται	ἐκέκλετο.
στόλος, στολή	στελῶ	ἔσταλμαι, σταλέντες.
γονή, γόνος, γέγονα	γένος	γίγνομαι, γέγαμεν.
κατα-κονά		ἔκανον.
πατροκτόνος, ἔκτονε	κτενῶ	κτάμενος, ἔκτανον.
φόνος		πέφαται, ἔπεφνε.
μέμονα	μένος	μέμαμεν.
μονή	μένω	μίμνω.
πόνος	πένομαι.	
τόνος, τονή	τενῶ	τατός, τέταται.
δόμος	δέμω.	
νόμος, νομή	νέμω.	
πομπή, πέπομφα	πέμπω.	
τομή, τόμος	τέμνω	ἔτετμον.
λοιπός, λέλοιπε	λείπω	ἔλιπον.
στοῖχος	στείχω	ἔστιχον, στίχος.
τοῖχος	τεῖχος.	
ἀλοιτής	ἀλείτης	ἀλιτεῖν.
οἶδε	εἴδομαι	ἴδμεν, ἰδεῖν.
πέποιθε	πείθω	ἐπέπιθμεν, πιθέσθαι.
οἶμος	εἶμι	ἴμεν.
σπουδή	σπεύδω.	
εἰλήλουθα	ἐλεύ(θ)σομαι	ἤλυθον.
	φεύγω	ἔφυγον.
ἀκόλουθος	κέλευθος.	

Latin instances are comparatively rare, but we may notice *toga* : *tego*—*moneo* : *mens*—*noceo* : *nex*, etc. Most of the known instances will be given in the Appendix on the Grammatical Function of Ablaut.

ă-series.

ă-series.

The type is:—

	I.	II and III.	IV.
Indo-European	ā	ă	No vowel.
Greek	ā	ă	„
Latin	ā	ă	„
	κυναγός	ἄγω, ἄξω, ἤγαγον	ὄ-γμος (ὀ-γ-μος), where o may be prothetic; cf. Sanskrit *j-man*.
	ambāges, coāgulum	ἀγρός.	
	exā(g)men	ago, agilis, ager.	

ἀγός, ἔπακτος probably belong to the third degree, which, however, here cannot differ from the second (p. 235).

δέ-δηϝ-ε	δα-ίω, δε-δαυ-μένος	δύη (δϝ-η).
δήϝ-ιον	δά-ηται, δάος, δαίς.	
	ἀπό, ab	po-situs.

This is the explanation given by Osthoff of the Latin prefix *po-* (*Z. G. d. P.* 25, *M. U.* iv. 340).

μῆκος, μήκιστος	μακρός, μᾶσσον, μακεδνός. Μακέδονες, cf. macer.	
	αἴθει, αἰθόμενος, αἰθήρ, αἴθρη. aestus, aestas	Idus (day of the full moon). ἰθαρός.
ἠϝώς, αὔσως (Aeol.) ἕως (Attic metathesis) ἦρι.	αὔριον. Aurora.	
γέγηθε, γέγαθε (Pindar) gavisus	γαίω, γαῦρος. gaudeo.	

I.	II and III.	IV.
κῆϝαι	καίω, καύσω, κέκαυμαι, καῦμα.	
clāvis, κλᾱΐς	clăudo.	

So in the verbal suffixes -μαι, -σαι, -ται, -αται, -μι, -σι, -τι, -εντι.

ŏ-series.

ŏ-series.

The type is:—

	I.	II or III.	IV.
Indo-European	*ō*	*ŏ*	No vowel.
Greek	ω	ο	„
Latin	*ō*	*ŏ*	„
√oq	ὄπωπα, ὀπωπή	ὄψεται, ὄσσεσθαι.	
	ὦψ, βοῶπις, κυνώπης	ὄψις, ὀπτήρ.	
	ἐνωπή	ὀπή, ὄμμα.	
		ὄσσε.	
		oculus.	
√od (hate)	ōdi, exōsus	ŏdium, odiosus.	
√od (smell)	ὄδωδε, ὀδωδή	ὄζει, ὀδμή.	
	εὐώδης	olere, olidus, odor.	
√or	ὄρωρε	ὄρτο, ὄρμενος.	
		ὤρορε, ὄρνυται.	
		ὦρτο.	
		oritur, ortus, origo.	
√vor	ὀρώρειν, ὥρα	ὄρονται, οὖρος, ὀράω.	
	πρωΐ	πρό, πρόμος	πρ-ίν.
		prō (lengthened as a monosyllable).	
	fōdi	ŏdere, fossus, fossa.	
		loquor, locutus	λάσκω (for λακ-σκω), ἔλακον, λελακυῖα.
	ὄλωλε	ὀλεῖται, οὐλόμενος, ὀλέκειν, ὀλετήρ.	

I.	II or III.	IV.
δμώμοκε	*δμοῦμαι, ὄμνυμι.*	
ἀνωμοτί.		
ὠλένη	ulna (?).	

Roots with constant long vowel.

We may now go on to consider some special points in connexion with the theory of Ablaut.

We have already noticed the fact that there are certain heavy roots (i. e. those of the long vowel series) where the long vowel remains permanent and is never reduced. This fixity, however, may be a later development superseding an original Ablaut. Such roots are, for instance, √*vē* in *ἄ-ημι* (given above), Sanskrit *vā́ti* (third singular), √*plē* in Sanskrit *prā́si*, *πλῆτο*, *plēnus*, etc., √*snē* in *νῆμα*, *nēvi*, Gothic *nēþla*, O. H. G. *nājan*. Compare the whole group of words connected with *τέ-τρη-ται*, *ῥήτωρ*, *ἄ-μη-τος*, *δι-ζή-μενος*, *κι-χή-μεναι*, and *ἡμι-*, *sēmi-*, Sanskrit *sāmi*; *μήν*, *mēnsis*, Gothic *mēna*, Sanskrit *mās*, in none of which do we find any cognate form with a short vowel, or at any rate a short vowel that is certainly the representative of a primitive short vowel.

Confusion of series.

A second point to notice is that owing to the existence of the same vowel in different Ablaut-series, the series tend eventually to get confused with one another. Thus the fact that the vowel that amplifies a nasal sonant in Greek is *a* tends to cause many words that really belong to the *ĕ*-series to pass to the *ă*-series. Thus *χανδάνω* is a nasalised present from a root *ghend*, *ghn̥d*, as in *pre-hend-o*, but it has passed entirely into the *ă*-series in *κέχανδα*. The true vowel is seen in *χείσομαι* for *χενδσομαι*. So *πάσχω*, *ἔπαθον*, *πάθος*, etc., might make us suppose we were dealing with an *ă*-root, if it were not for *πέπονθα*, *πένθος*, *πείσομαι* (*πενθ-σομαι*).

By a similar confusion, roots of the *ĕ*-series have passed into the *ē*-series. For instance the Gothic *sētum* corresponds to an Indo-European *se-sd-mem* (reduplicated), which regularly became *sēdmem*. In *sēdmem*, however, the stem was naturally taken to be *sēd-*, and accordingly, though the root *sĕd* belongs to the *ĕ*-series, which does not properly show *ē* in any degree, yet a long *ē* of a secondary origin comes in this way to be considered as an original Ablaut of the *ĕ*-series. It is by the analogy of cases like this that we get forms with *ē* from roots which cognate forms show to belong to the *ĕ*-series. Thus we have *μῆδ-ος*, *μήστωρ*, O. H. G. *māza*, German *Māss* by the side of *μέδ-ω*, *mŏdus*, Gothic *mita* : *μέρ-μηρ-α* by *μέρ-ιμνα* : *tēg-ula* beside *tĕgo* : *rēg-ula* beside *rĕgo*, etc. *Ē* also appears in the *ĕ*-series owing to the contraction of the augment with the following vowel. Thus Indo-European *e-ĕd-a* = *ēda*, Sanskrit *āda*, Latin *ēdi* (beside *ĕdo*), (cf. I.-E. *e-es-a*, Sanskrit *ása*, Greek *ἦα*), and long *ē* thus appearing as an apparently regular member of the *ē*-series, it was but a further step to introduce into this series *ō*. For *ō* : *ē* was a regular Ablaut, and *ē* : *ĕ* had come to be thought one: the two together naturally produced a triple Ablaut *ō* : *ē* : *ĕ*. Hence *ἐδ-ωδ-ή* (a reduplicated form) from the root *ĕd*.

Once more, the Ablauts *ē* : *ĕ* and *ā* : *ă* are regular, and these by a natural confusion give rise to an Ablaut *ē* : *ă*. Hence perhaps *cēlo*, *cālīgo*, *supercilium*; *sīca* (said to be for **seca*, cf. *suspīcio* beside *suspĭcio*), *sĕcare*, *săxum*.

Again, *ō* appears in the *ĕ*-series by a different process. The nom. sing. of consonantal stems, as we shall see later, was formed by lengthening the vowel of the accus. stem, without adding *s*. Thus we get *ἡγεμών*, *ἠώς* (Sanskrit acc. *uṣásam*), *πειθώ* (stem ends in *-oį*, *K. Z.* xxvii. 371), Sanskrit *gāús*, *vā́k*, *pā́d*. Thus we should originally have had the series:—

Indo-European nom. *pṓd*, acc. *pódm̥*, gen. *pedós*, or *pdós* (*bdós*).
cf. Dor. *πώς* *πόδα* *pedis*, Zend *fra-bd-a*.

But series of this type give *ō* as an apparently regular member of the Ablaut *o* : *e*, i. e. the *ĕ*-series. Accordingly on this analogy we get the following groups:—

κλώψ	*κλοπή*	*κλέπτω*	*ἐκλάπην*.
σκώψ	*σκοπέω*	*σκέπτομαι*.	
παραβλώψ		*βλέπω*.	
φώρ, für	*φόρος*	*φέρω*.	
δῶ, *δῶμα*	*δόμος*	*δέμω*.	
τρωπάω	*τρόπος*	*τρέπω*.	
τρωχάω	*τροχός*	*τρέχω*.	

στρωφάω	*στρόφος*	*στρέφω.*
πωλέομαι		*πέλομαι.*
πωτάομαι	*ποτέομαι*	*πέτομαι.*
νωμάω	*νόμος*	*νέμω.*

Cf. *mō-s*, *mē-tior*, *μέτρον*, and *plōrare* beside *plēre.*

There are other cases of abnormal relations between vowels which are certainly not original, but cannot yet be satisfactorily explained (cf. pp. 72–76).

Thus we have :—

πίλναμαι : *πελάω.*
πίτνημι : *πετάννυμι.*
σκίδνημι : *σκεδάννυμι.*
κίρνημι : *κεράννυμι.*
πίσυρες : Aeol. *πέσσυρες.*
νύξ : nox, Sanskrit *nakta*, Gothic *nahts.*
ἀνώνυμος : *ὄνομα*, nōmen.
ὄνυξ : Sanskrit *nakhá.*
γυνή : Boeotian *βανά* (p. 134).
λύκος : Sanskrit *ṛ́ka*, Gothic *vulfs* (p. 127).
κύκλος : Sanskrit *cakrás*, Gothic *hwehla.*
μύλη : mola.

There are also instances which make it impossible to deny the existence of Ablauts *a* : *o* and *a* : *e*, as isolated phenomena, but we can in these cases establish no general law.

Thus we have :—

ὄβρια : *κόλ-αβρος*, aper (Curt. *G. E.* p. 373).
κόβāλος : *καύαξ*, cavilla.
σόος, *σόω*, *σῶος* : *σαώτερος*, sanus.
λογγάζω, longus : λαγγάζω.
μόννος, monile : *μάννος.*
ὄμπνη (opes ?) : *ἄφενος*, cf. ap-tus : op-timus.
doceo : διδάσκω (for δι-δακ-σκω).
upupa : ἔποψ.

But *ἔποψ* is by popular etymology connected with *ἐπόπτης* (*ἔποψ ἐπόπτης τῶν αὑτοῦ κακῶν* Aesch. *Frag.* 291), and *upupa* would be by assimilation in an onomatopoeic name.

orcus : arx.

focus : fax.
jocus : jacio.
ad-ol-esco : alere.
pollere, u-pil-io : Pales.
οἶδμα : aemidus.
οἶκτος : aeger.
ὄϊς, ovis : avilla, avena (but see p. 187).
loqui : λάσκειν, ἔλακον.
domare : δαμᾶν.
portio : pars.

In some cases the *o* in Latin may be due to a liquid sonant, and the *a* in Greek to a liquid or nasal sonant.

Cases of an Ablaut *a* : *e* not to be accounted for by the ordinary theory are:—

ardea : ἐρωδιός.

Possibly both represent an original *r̥di*, the ε in Greek being prothetic.

aries : ἔριφος.
nactus : ἐνεγκεῖν (for ἐ-νε-νκ-εῖν, implying a strong √νεκ).
margo : merges.
man-cus : men-da.
vas (*văd-*) : ἄ-Ϝεθ-λον.
maneo : μένω.
fastigium : festuca.
hara : her-ctum, cf. co-hors.
malus : μέλας.
rătis : re(t)mus, ἐρετμός.
quattuor : τέσσαρες.

In few, however, of these cases can the connexion be considered certain. Many contain a liquid or nasal, and the treatment of long sonants in Latin is too doubtful for us to express any certainty as to the relation; *rătes* may be for *rətes*, and be related to the long η in τριήρης, as *dătus* in *creditus* to τί-θη-μι.

CHAPTER XI.

ACCENT.

Importance of Accent. No complete and consistent theory of the history of accent in the Indo-European languages has as yet been attained, and indeed it is only recently that the question has come to be of scientific importance. A few years ago the fact that *πόδα* was paroxytone but *ποδός* oxytone was one to be remembered for the purposes of exact scholarship, but had no bearing on the theory of language as a whole. But later hypotheses have connected all the phenomena of Ablaut and inflexion with those of accent; the great principle known as Verner's law has illustrated the original accentuation of the North European languages, established its relation to that of South Europe, and shown that both systems are to be traced back to some one system prevailing in the original Indo-European language. It therefore becomes of more importance to ask what this accent is that bears so important a part in the development of language, and how it comes to pass that the system of accentuation in Sanskrit, for instance, is so different from that obtaining in Greek.

Meaning of Accent. By the term accent in its widest sense we understand (1) the relative *stress* or (2) the relative *pitch* with which the different parts of a word or sentence are pronounced. That is, the question of accent is concerned with the laws which apply to the synthesis of combined sounds. We have already remarked, in dealing with the different letters, that they do not actually exist as individual sounds, but only in the combinations of the spoken language. The division of the elements of speech into syllables, words, and sentences is partly logical, partly due to considerations of convenience, and only in part phonetic. As a collection of mere sounds, language is not divided into words or sentences: this division results only from attending to the meaning that these sounds convey. But the division into syllables is more entirely a phonetic question. If sentences were uttered with the same force throughout, the question of a division into syllables would not arise. But as a matter of fact the different elements that compose any group of sounds are uttered with various degrees of force, which can be infinite in number. It is this that we mean by the *exspiratory* accent, which depends on the stress, the degree of energy or strength of voice with which a sound is pronounced.

Exspiratory accent.

On the other hand there is also a variation in the tone or pitch with which different syllables are pronounced. This variation consists in a raising or lowering of the pitch of the voice, and constitutes the musical or *chromatic* accent.

Chromatic accent.

No Indo-European language employed exclusively either the exspiratory or the chromatic accent, but one or other always predominated. In the classical languages, for instance, the main principle of accentuation was musical, and hence the name προσῳδία given to accent. In the languages of North Europe the principle was, as in our own language, exspiratory, though of course differences of pitch were also employed. In a language like French the distinctions of stress are less marked and the syllables are nearly uniform.

Accent in Greek and Latin.

The questions whether the accent of Greek and Latin was identical in nature, how far the accent is to be considered purely exspiratory, how far chromatic, and how we are to reconcile accent with the phenomena of quantity and rhythm, are too complex and too much disputed for us to enter into them at any length here. But we may remark that, if the accent were purely chromatic, it is difficult to see how the tendency should have arisen to draw back the accent from the end of the word, or how it should have come to stand in such close relation to the phenomena of Ablaut.

Grimm's law.

The importance of a consideration of accent in the comparison of the Indo-European languages can best be illustrated by the principle known as Verner's law. The law of the permutation of consonants between the languages of Northern and Southern Europe was formulated by Jacob Grimm, and established a fixed relation between the consonantal sounds of German and the classical languages of Sanskrit, Greek, and Latin, which here represent the original Indo-European language. Where Greek and Latin show Aspirates, German shows Mediae; where Greek and Latin show Mediae, German shows Tenues; where Greek and Latin show Tenues, German shows Spirants or Fricative sounds.

The results may be grouped as follows:—

I.-E. Tenues *k*, *t*, *p* = Germ. Spirants *h*, *th*, *f*.
I.-E. Mediae *g*, *d*, *b* = Germ. Tenues *k*, *t*, *p*.
I.-E. Aspirates *gh*, *dh*, *bh* = Germ. Mediae *g*, *d*, *b*.

The German languages.

By the word 'German,' we understand the original German language. The German or Teutonic languages, as we have already seen (p. 34), fall into three groups—the Gothic, the Scandinavian, and the West German. The first two may, for philological purposes, be classed together as East German. Of these Gothic is phonetically the type of the original German language. It was divided into the languages of the East Goths or Ostrogoths, and the West Goths or Visigoths. Of the language of the Ostrogoths there are no remains. The language of the Visigoths is known through the fragments of the Bible of Ulphilas (A. D. 311); it still survived to some extent as a spoken language in the Crimea till the 16th century.

The oldest remains of the Scandinavian languages (p. 34) date from the 12th century. These languages are closely akin to the Gothic.

The history of the West Germans is complete confusion until the conquest of Britain in the 6th century. Eleven main tribes are to be distinguished—Lombards, Burgundians, Bavarians, Alemanni, Franks, Hessians, Thuringians, Angles, Saxons, Jutes, and Frisians.

East and West German.

In the first instance, West is distinguished from East German by the inflexion of the verb. The East Germans formed the 2nd sing. pret. of strong verbs in *-t* (*namt*, *gaft*), the West Germans in *-i* (*nâmi*, *gâbi*), but from the beginning of the literary period other distinctions begin to appear. The history of the Anglo-Saxons and Frisians from the 6th century is, for political reasons, distinct. The remaining languages have three periods, distinguished as Old, Middle, and New.

High and Low German.

The Old High German period extends to 1100 A. D., with a literature of glosses, glossaries, ecclesiastical translations, hymns, and some popular poetry among the Franks of the upper Rhine, the Alemanni, and Bavarians. The Lombards, Burgundians, and West Franks became completely Romanised, and their languages disappear.

In the German district proper during this period we find in operation, though only partially and unequally a *Lautverschiebung* or mutation of consonants. It took place most completely and earliest in the South (High German), less and less towards the North (Low German). The Low German dialects are the least changed, and most nearly represent the original German language.

Thus, disregarding dialectic differences—

t initial becomes in H. G. the fricative *z* (= *tz*); e.g. Low G. *teihn* = H. G. *zehn*. Medial and final *t* becomes a spirant which is written *z* but pronounced sharp *s* (Germ. *sz*). This change took place about 600 A. D.

k medial and final becomes in H. G. the spirant *ch*; e. g. Low G. *spreken* = H. G. *sprechen*.

p medial or final becomes *f* in all H. G.; e. g. Low G. *schap*, H. G. *schaf*.

h and *f* remain unaltered.

th gradually passed to *d* in H. G.; e.g. *brother* became *bruder*.

d became H. G. *t*. In the intermediate districts *k* and *g*, *p* and *b* are not distinguished.

Middle High German embraces the period from 1100 A. D. to the 14th century; New High German the period since that time.

Exceptions to Grimm's law. Having defined the term 'German' we may pass on to the exceptions to Grimm's law, which are threefold. We have first special combinations of consonants. Indo-European *sk*, *st*, *sp* are 'protected' by the hard spirant *s*, which remains unchanged; the following hard mutes do not, as by Grimm's law, become the corresponding aspirated mutes, but remain unaltered. Again, in the special case of the Indo-European combinations *kt*, *pt*, the *k* and *p* by Grimm's law become *h* and *f* respectively, but the following hard dental is unchanged (*K. Z.* xi. 161; Paul und Braune *Beiträge*, 5. 538).

Grassmann's law. Another class of exceptions fall under the head of Grassmann's law (*K. Z.* xii. 81): by which, in the apparently anomalous cases like Sk. *duhitar* (= Goth. *dauhtar*), Sk. *bandh* (= Goth. *bindan*), it is shown that the Indo-European stem began and ended with an aspirate, but that in the derived languages the double aspirate in the same syllable was not tolerated, and accordingly I.-E. *bhendh-* became Sk. *bandh-*, Gk. *πενθ-* (for *φενθ-* in *πενθερός*, *πεῖσμα*), Lat. *of-fend-ix*, and Goth. *bind-en*, quite regularly.

Verner's law. A third class of exceptions comes under the law enunciated by Verner (*K. Z.* xxiii. 98 sqq.), which explains those cases in which sonant mutes *g*, *d*, *b* in the German languages correspond, not to the aspirated, but to the hard mutes *k*, *t*, *p* in the Indian and Indo-European languages. We have, for instance, Germ. *tegu-* = I.-E. *dekem*, Germ. *modar* = I.-E. *mātar*, Goth. *bairand* = Sk. *bharanti*.

It may be well first to give a list of some of these exceptions, that it may be clear that they are neither few nor unimportant.

A. German *g* = I.-E. *k*.

German.	Sanskrit.	Greek.	Latin.
saga (saw)			seco.
sagjan (say) A.-S. secgan		ἔννεπε	insece.
þegna-(thane) A.-S. þegn		τέκνον.	

German.	Sanskrit.	Greek.	Latin.
Goth. hals-aggan (curve of neck) A.-S. angan (arrow-head)		ἀγκών	ancus.

B. Germ. *d* = I.-E. *t*.

þridja A.-S. þridda	*tṛtīya*		tertius.
Goth. fadi- (in compounds like brûþ-fadi, bridegroom)	*patī*	πόσις.	
fedvôr A.-S. feóver	*catvāras*	τέσσαρες	quatuor.
and- (opposite) A.-S. andswerian	*anti*	ἀντί	ante.
andja (end) A.-S. ende	*anta*, *antya*		antiae.

C. Germ. *b* = I.-E. *p*.

Germ. *seban*, A.-S. *seofon* (seven) = Sk. *saptan*, ἑπτά, *septem*.

But we have also cases of variation in consonantal change within the limits of the same root.

Variation in the same root.

(i) I.-E. *k* = Germ. *h* and *g*.

Goth. *taihun* (A.-S. *týn*) = δέκα, *decem*; but from the same root comes a noun *tegu*, Goth. *tigu*, O.H.G. *-zig*, A.-S. *-tig*, Eng. *-ty* (in *twen-ty*).

So Germ. hauha, A.-S. heáh (high), N.H.G. hoch.
hauga (heap) (N.H.G. hüg-el).
Germ. teuhan, Goth. tiuhan = duco (N.H.G. ziehen).
tuga, O.H.G. A.-S. heretoga, N.H.G. Herzog.
Germ. fanhan, subst. fanga N.H.G. fang.
slahan } slaga schlag.
A.-S. sleán } A.-S. slaga.

German.		Sanskrit.	Greek.	Latin.
O.H.G. swehur A.-S. sveor	=	Sk. *çváçura*	ἑκυρός	socer.
O.H.G. swigar A.-S. sveger	=	Sk. *çvaçrū́*	ἑκυρά	socrus.

(ii) I.-E *t*=Germ. *þ* and *d*.

fraþjan (understand) subst. frôda A.-S. frôd.
soþa (satisfying) sada cf. satur, sat, satis.
leiþan (go) A.-S. lið (limb) A.-S. lædan, lâd.

(iii) *p* and *b* have coalesced in most German languages, and we therefore do not find the same variation in the case of the labials.

Variation in conjugation.

Particularly is the same variation noticeable in conjugation: the German surd fricatives and sonant mutes which answer to Indo-European surd mutes so divide themselves in conjugation that all present forms (infin., pres. indic., conj., imper., part.) and the singular of pret. indic. show surd fricatives, all other forms sonant mutes.

A. I.-E. *k*=Germ. *h* (*hv*), *g*.

In the following list Anglo-Saxon forms are given to illustrate old German.

N. H. G.	Pres. inf. A.S.	1 sing. pret.	1 plur. pret.	Past pt.
schlagen	sleán (strike)	slôh	slôgon	slägen.
	leán (abuse)	lôh	lôgon.	
	hlehhan (laugh)	hlôh	hlôgon.	
sehen	seón (see)	seah	sægon.	
befehlen (commend)	feolan (hide)	fealh	fulgon.	
gedeihen (grow)	þeon	þâh	þigon	þegen.
leihen (lend)	lîhan	lâh	[ligon].	
ziehen (drag)	teón	teáh	tugon	togen.
fliehen (fly)	fleón	fleáh	flugon	flogen.

B. I.-E. *t*, = Germ. þ, *d*.

Engl. *quoth*	cweðan	cwæð	cwǽðon	cweden.
werden (become)	veorðan	vearð	vurdon	vorden.

N. H. G.	Pres. inf. A. S.	1 sing. pret.	1 plur. pret.	Past pt.
schneiden (cut)	snîðan	snâð	snidon	sniden.
schreiten (walk)	scriðan	scrâð	scridon.	
seiden (seethe, cook)	seóðan	seáð	sudon	soden.

It is clear that these variations, which run through the Old Northern, Old Saxon, Old Frisian, Anglo-Saxon, and Old High German languages cannot have originated independently in each. The sphere is too limited and definite, and the acoustic difference too small, for analogy to come in. So that where we find them in one language we are justified in assuming them, even though not actually found, for the other members of the group. It is true that the variation is unknown to Gothic, which has the surd fricatives throughout; but Gothic in other respects has a tendency to uniformity unknown to the other Germanic languages.

The difference then must go back to a period before the separate existence of the several German languages; and the explanation of the variation in conjugation must also be the explanation of that in individual word-forms, i. e.

tehan beside *tegu* is to be explained in the same way as *slahana* (infin.) beside *slagana* (past pt.).

brôþar beside *môdar* in the same way as *kveþana* beside *kvedana.*

Now the Indo-European system of verb inflexion depends upon:—

(i) Difference of termination.
(ii) Difference of root-vowel.
(iii) Presence or absence of augment and reduplication.
(iv) Difference of accent.

Now take the following groups of primitive German forms:—

kveþana	kvaþ	kvâdum	kvedana.
slahana	slôh	slôgum	slagana.
lîþana	laiþ	lidum	lidana.

Here the terminations of *kveþana* and *kvedana* are the same, but the consonants different; therefore the variation in the consonants cannot depend on (i).

Slahana has a short, *slôh* a long vowel; but the consonant is the same; therefore the variations cannot depend on (ii).

They cannot depend on (iii), as this will not account for change in non-verbal forms; and we should have expected the same form throughout the preterite, which is not the case.

Therefore, by the method of exhaustion, it must depend on (iv).

Verner's law.

But this can also be proved inductively—the law that results being this: *Where in Sanskrit the accent is on the root syllable, we have in German surd fricatives at the end of roots; where the accent falls on the termination, we have sonant mutes.*

We may illustrate the laws in the system of verbal inflexion as follows:—

A. Where the root is accented in Sanskrit; in German we have surd fricatives in the corresponding conjugation.

Sanskrit pres. indic. =	German pres. indic.
bhédāmi	lîþa.
bhédasi	lîþis.
bhédati, etc.	lîþiþ.
„ „ pres. potential =	„ „ pres. conj.
bhédeyam, etc.	lîþau, etc.
„ „ pres. imp. =	„ „ pres. imp.
bhéda, etc.	lîþ, etc.
„ „ pres. part. act. =	„ „ pres. part. act.
bhédant—	lîþand—
„ „ verb. subst. =	„ „ infin.
bhédana	lîþan.
„ „ perf. ind. sing. =	„ „ pret. ind. sing.
bibhéda	laiþ.
bibhéditha, etc.	laist.

B. Where the termination is accented in Sanskrit, in German we have sonant mutes:—

Sanskrit perf. ind. plur. =	German pret. ind. plur.
bibhidimá	lidum.

bibhidá	liduþ.
bibhidús	lidun.
Sanskrit perf. potent. =	German pret. conj.
bibhidyám, etc.	lidjau, etc.
„ „ perf. part. pass.	
bhinná (=*bhidná*)	lidana.

The same principle underlies the relation of *s* and *z* (*r*) in the German languages. For an Indo-European *s* is represented sometimes by *s*, sometimes in Gothic by a *z*, which in other German languages is *r*. The conditions determining the appearance of the sonant *z* (*r*), instead of the surd *s*, are the same as those which determine the appearance of *g*, *d* instead of *h*, þ. E.g. A.-S. *eáre* answers to *auris* for **ausis*, but *náse* to *nasus*, *mús* to Sk. *mūṣ*.

Also in conjugation, we find A.-S. *ceósan*, *ceás*, *curon*, *coren*, where *s* and *r* alternate on the same principle as *h* and *g*, *þ* and *d* above.

It must be noted that in the division of syllables all consonants go with the preceding vowel, e.g. *fad-ar*, *finþ-an*. We may illustrate this division by comparing the English pronunciation of *mag-nan-im-it-y* with the French *ma-gna-ni-mi-té*.

Further illustration of the operation of Verner's law is reserved for a foot-note[1].

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[1] (*a*) Individual cases are—

Sk. *mātár*	Germ. môdar.
pitár	fadar.
snuṣā́ (cf. *νυός*, *nurus*)	A.-S. snóru.
çatá (*ἑ-κατό-ν*)	Germ. hund.
catvā́ras	fedvôr.
saptán (*ἑπτά*)	seban.

Further—

Sk. *ketú* (appearance)		Germ. haidu	A.-S. hâd (-hood).
ántara		anþara	óðer (other).
antár	inter	undar	under (under).
ātí	*νῆσσα*, an-a-ti-	anadi	ened.

(*b*) In Sanskrit causatives the accent fell on the suffix: the same was the case in the German causatives, e.g.:—

hlōgjan (to make to laugh)	from hlahjan.
hangjan (to hang, trans.)	from hanhan (intrans.)

It may be observed that the foregoing account depends on the hypothesis that the Sanskrit in the majority of cases represents the original Indo-European accent; but this hypo-

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fra-vardjan (to destroy)	from fravairþan.
sandjan (to send)	from sinþan (to go).
nazjan (to save)	from nesan (Germ. genesen).
laizjan (to teach)	from lîsan (to know), cf. *de-lirare*.

And generally we may say that there is no German causative with *h*, þ, *s* as final vowel of the root.

(*c*) Strong verbs in German correspond to the first and fourth Indian classes, which accent the root syllable. Accordingly the Indian termination *-t* corresponds to a German *d*, e.g.:—

German 3 *sing. pres. ind.*	berid	=	Sanskrit *bhárati*.
2 *plur. pres. ind.*	berid	=	*bháratha*.
2 *plur. pres. conj.*	beraid	=	*bháreta*.
3 *plur. pres. ind.*	berand	=	*bháranti*.

(*d*) The Sanskrit ending *-tá* of the participle corresponds to a German *-da*, e.g.:—

Sanskrit *damitá*	Gothic tamida	English tamed.
sāditá.	satida	sated.
matá	munda.	
jātá	kunda	German kind.
çrutá	A.-S. hlûd	English loud.

Compare the participial forms *kaldá* (cold), root *gel-*, *aldá* (old, cf. *altus*), *dauda* (dead).

(*e*) Words formed with the suffix *ti* are sometimes oxytone, sometimes barytone in Sanskrit. We find a corresponding variation of the dental in German.

Thus:—

ga-qum-þi	Sanskrit *gá-ti*.	
ga-baur-þi	√*bher*	cf. bir-th.
But sā-di	√*se*	cf. seed.
ga-mun-di	Sanskrit *matí*	cf. mind.
spôdi	Sanskrit *sphātí*	cf. speed.
skor-di		cf. Greek *κάρ-σις*.

An extension of Verner's law has been made by Bugge (Paul und Braune, *Beiträge*, xii. 399), who maintains that, even at the beginning of a word, original *k*, *t*, *p* are sometimes represented by German *g*, *d*, *b*, instead of by the regular *h*, *þ*, *f*. Where the main accent originally rested on the first or second syllable we have in German *h*, *þ*, *f*, but where the main accent originally rested on the third syllable, or even later, we find in German *g*, *d*, *b*. In such words the first syllable was pronounced with weaker stress.

Anglo-Saxon *distaef* (distaff) is to be referred to original *dehsistabás* for *þehsistabás*, where *þehs-* answers to Latin *tex-ere*.

Gothic *gamains* = Latin *communis*, and both are to be referred to an original *kommoinis*: in similar instances German *ga-* answers to Latin *com-*.

Gothic *gabri* (wealth) is not to be referred to *giban*, but answers to the thesis is borne out by the facts given above and will receive further justification in the following pages.

Phonetically we may explain Verner's law by observing that the exspiratory accent and the surd consonant alike require a strong stream of breath. Where therefore the exspiratory accent existed, there was sufficient volume of breath to maintain the surd consonant, but where the exspiratory accent was wanting, the surd consonant became the corresponding voiced consonant, which requires less emphatic utterance.

Syllabic accent.

Sentence accent.

***Hauptton* and *Nebenton*.**

So far we have spoken almost exclusively of the accent which falls upon a particular syllable of the word, and which we may therefore call the 'Syllabic accent.' And it is no doubt in this sense that we most frequently use the term, when we speak e.g. of the accent of *ἀνήρ*, *hómo*, *mankínd*. But besides this there is the 'sentence-accent' which falls on some particular word in a sentence, so that this word is to the surrounding words what in the case of syllabic accent the accented syllable is to the surrounding syllables. Further, in both these cases we are using the word accent in an absolute sense; we are speaking as though there were but one accent in every word or sentence. But we may also use the word to express the relative stress laid on different syllables of the same word or on different words of the same sentence. In the words '*mànipuláris*,' '*còntemplátion*,' e.g. the main accent or '*hauptton*,' as the Germans call it, is on the penultimate syllables; but the first syllable in both cases has an accent which is relatively strong as compared with that on the next, though relatively weak in comparison with that on the penult. This latter may be called the secondary accent, or in German the '*nebenton*.' Both these accents, the *hauptton* and the *nebenton*, must be taken account of in any general theory of the subject.

Latin *copia*, i. e. *ga-abí* = *co-opi-a*. Regularly Latin *co*(*m*)- should be represented by German *ha*(*m*)-, as in Gothic *hansa* (crowd), whence are named the *Hanse*-towns.

Anglo-Saxon *géac* (mod. English *gowk*) is related to *κόκκυξ*, and points back to an original German *konkugós*.

It may be noticed that the *hauptton* or main accent is an important part of the word or sentence in which it occurs. According as the syllabic accent rests on one or another syllable, the meaning of the word is changed. In English '*cónvert*' means one thing, '*convért*,' another, and the same principle runs through all Indo-European languages (cf. τρόχος, τροχός, Sanskrit *bháras*, *bharás*). The position of the syllabic accent also determines whether the word is intelligible or not; *ássist*, e.g. is meaningless, *assíst* intelligible, and we cannot doubt that the same would have been true in Greek, e.g. of ἄνδρος instead of ἀνδρός[1]. But precisely the same is the case with the sentence-accent. '*Give me that book*' has a totally different meaning according to the place of the sentence-accent, while '*it is raining*' with the accent on the first word is unintelligible[2].

Sentence accent in Greek. The part played by sentence-accent in Greek is highly important. The most common case is the alteration of the acute accent on an oxytone word to a grave in the middle of a sentence. What the exact meaning of this alteration may be it is not easy to say, but it clearly has to do, not with the word in itself, but with its position as member of a group. Another case is the difference of accentuation in enclitics and interrogatives (e.g. τίς but τις), the word in both cases being precisely the same, but the function of the word in the sentence differing. But above all we may notice the influence of sentence-accent in the three groups of phenomena known as Enclisis, Proclisis, and Anastrophe.

Enclisis. Of Enclisis we shall have more to say later on, at present it is sufficient to note the difference of Ζεὺς ἡμῖν and Ζεὺς ἥμιν, Ζεύς ἐστι and Ζεὺς ἔστι, where it is clear that the

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[1] For a possible instance in Greek of the difference in accent causing a difference in meaning, we may compare the story of the line in Eur. *Or.* 279 *ἐκ κυμάτων γὰρ αὖθις αὖ γαλήν' ὁρῶ*, where the actor Hegelochus pronounced γαλῆν. (Ar. *Ran.* 304.)

[2] With regard to the syllabic-accent it is to be remarked that it is capable of varying its position even within the limits of a single syllable—that it comes, e.g. much nearer to a following media than to a following tenuis; contrast *seat* and *seed*, *meat* and *meed*, *leak* and *league*.

Proclisis.

Anastrophe.

varying accentuation is due not to anything in the words themselves but solely to the part they play in the sentence. So again with Proclisis[1], *θεὸς ὥς* and *ὡς θεός* differ purely in the position of the words employed. The Anastrophe of prepositions is a disputed point, and this again will be discussed later on. Here it will be sufficient to point out the influence of sentence-accent in *περὶ σοφίας* beside *σοφίας πέρι*.

Enough has been said to show that in any investigation of the question of accent we must take account not merely of syllabic but also of sentence-accent. We can now go on to consider in detail the phenomena of accent as they are presented to us in the Greek language. It is clear that to arrive at any scientific result, we must be guided in this department by the same principles as elsewhere. We must go upon the supposition that the system we find in Greek or any other Indo-European language is developed from the system that prevailed in the original language, a supposition which is proved by Verner's law; that the development is in accordance with strict phonetic law, and that any apparent irregularity must be explained, at least for the present, by the action of analogy.

The law of three syllables.

Now the system of accentuation presented to us by Greek is dominated by the law of three syllables. By this law the acute accent or *hauptton* may not recede farther from the end of a word than the antepenultimate, or, in cases where the last syllable is long, than the penultimate syllable. In technical language, the recessive accent is limited to three syllables or three *morae*, a *mora* being the quantity of a short vowel, and a long vowel being equivalent to two *morae*. To this law, which is otherwise universal, there are two cases of apparent exception.

(1) In the case of words with a trochaic ending the acute

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[1] It may be noticed that proclisis is unknown to the ancient grammarians, who always accented what we now call proclitics. The name was adopted by Hermann to describe the practice of the MSS., but in defiance of the rules of the grammarians. From him it has passed into modern grammars.

accent may fall on the fourth *mora* from the end, e.g. ἄζωστος, ἤπειρος. Of this exception no explanation can be given, but there may be noticed a certain fluctuation in this class of words, the earlier accent, according to the grammarians, conforming to the law of three syllables:—

We find, e.g.:—

τροπαῖον (Old Attic) beside	τρόπαιον (New Attic).
ἀχρεῖος (Homeric)	ἄχρειος (Attic).
γελοῖος	γέλοιος (New Attic).
ἀγροῖκος	ἄγροικος (Attic).
ὁμοῖος (Homeric)	ὅμοιος (Attic).
ἐρῆμος	ἔρημος.
ἑτοῖμος	ἕτοιμος.

Similar cases are:—

μοχθηρός	μόχθηρος.
πονηρός	πόνηρος.
ἀγυιά	ἄγυια.
ὀργυιά	ὄργυια.

In some of these cases the testimony of grammarians is contradictory, in some the difference of accent is connected with a difference of meaning, e.g. ἄγροικος is variously accented according as it means ὁ ἐν τῷ ἀγρῷ οἰκῶν or ὁ ἀμαθής, though again authorities differ as to which accent is appropriate to each meaning. But enough has been said to show a fluctuation in this class of words with a trochaic ending, though such a fluctuation is not confined to words of this rhythm.

(2) In words like κῆπου the violation of the law of three *morae* is only apparent, as in this case the accent falls on the second *mora* of the first syllable (κεέπου).

The accent in Sanskrit.

The law of three syllables, or more strictly of three *morae*, is then virtually universal in the Greek language. Let us now turn to Sanskrit. The system of accentuation that prevails in Sanskrit may be proved to represent very closely the system of the original language, chiefly by the fact that the so-called exceptions to Grimm's law which are connected by Verner's law with the phenomena of accent give indications of the existence of an accentuation-system in the Germanic languages differing very much from that now dominant, but corresponding closely to the Sanskrit system. Now in Sanskrit the accent is not confined within the narrow limits which restrict it in Greek and indeed in Latin. The accent in Sanskrit is '*free*,' that is, it may fall upon any syllable in a word; and its actual position is determined not by the quantity of the final syllable (as in Greek), nor by that of the penultimate syllable (as in Latin), but solely by the inflexion of the word and its function in the sentence. No more striking instance of the difference of the two systems can be given than by the case of the finite verb, which in Sanskrit is unaccented, except when it appears in dependent clauses or at the beginning of a sentence.

Wackernagel's theory.

Supposing the systems of Sanskrit and Greek to be both derived from some one primitive Indo-European system, the question naturally arises how we are to reconcile facts apparently so conflicting. To this question an answer that is at any rate partially satisfactory has been given by Wackernagel (*K. Z.* xxiv. 457 sqq.). His view, as amplified and extended by Bloomfield in the *American Journal of Philology* (iv. 21 sqq.) and by Wheeler (*Der griechische Nominalaccent*, Strassburg, 1885) will be given in the following pages.

It is clear that there are in Greek a certain number of words which exhibit the 'free,' or as we may call it the 'historic' accent, an accent resting on different syllables of the words according to laws which now escape our observation. The accent of πέντε, ὀκτώ, πούς, ποδός is clearly identical with that of Sanskrit *páñca*, *aṣṭā́*, *pā́d*, *padás*, and whatever is the explanation of the one must also be the explanation of the other. But the accent of ἐβούλευον, ἐβουλεύετε exhibits a new principle which has nothing analogous in Sanskrit and must be explained by the intervention of a new law, that of the three *morae*. The discovery of Wackernagel was the connexion of the accentuation of such words with the accentuation in cases of enclisis. The accent limited by the law of three syllables may be called the recessive accent.

Certain words in Greek under certain circumstances take no accent of their own, but 'throw the accent back,' as the expression is, upon the preceding word. But the accent in enclisis is limited in Greek, as in the case of single words, to three syllables and three *morae*: that is to say, the enclitic word is considered as an integral part of the preceding word (as indeed it is written in Latin in the case of *-ne*, *-que*, *-ve*) and the whole word-group is then accented in accordance with the law of three syllables. Thus the accent of Ζεύς μοι is identical with that of κήπου, that of καλός ἐστι, οὔ φησι with that of ἄζωστος. But in a case like Ζεὺς ἤμων complete enclisis is impossible, as ἤμων contains four *morae*. As a substitute therefore for complete enclisis the accent goes as far back as the law of three *morae* will permit. The importance of this principle will appear presently[1].

Quasi-Enclisis. We have seen that the finite verb in principal clauses in Sanskrit is unaccented and enclitic; the verb in Greek may be described as *quasi-enclitic*. Owing to the law of the three syllables it is not able in the vast majority of cases to incline its accent entirely on the preceding word; as a substitute therefore for complete enclisis it draws back the accent as far as the law of three syllables permits.

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[1] It may be convenient to give the laws of enclisis as usually understood. They are stated by Chandler (*Greek Accentuation*, § 964 sq.) as follows:—

(i) An oxytone word followed by an enclitic remains oxytone, the enclitic losing its accent, *ἀγαθός τις*.

(ii) After a paroxytone word a monosyllabic enclitic loses its accent, *φίλος τις*.

But (*a*) a paroxytone word with a trochaic ending, when followed by an enclitic, takes an acute on the last syllable, *ἄνδρά μοι*.

(*b*) a paroxytone word of any form followed by an enclitic beginning with σφ takes an acute on the last syllable, *πολλάκίς σφεας*.

The last two rules are tacitly ignored by modern editors.

(iii) A dissyllabic enclitic after a paroxytone word, other than the cases given above, is oxytone, *πολλάκις ἐστίν*.

(iv) A proparoxytone followed by an enclitic takes an acute on the last syllable, *ἄγγελός τις*.

(v) A properispomenon followed by an enclitic takes an acute on the last syllable, *σῶμά τι*. But dissyllabic enclitics after properispomena ending in ξ or ψ are oxytone, *κῆρυξ ἐστίν*.

(vi) After a perispomenon enclitics lose their accent, Ἑρμῆς πως.

In general we may say that the historic accent, as presented to us in Sanskrit, is preserved in Greek wherever its appearance is not prevented by the intervention of one of the special laws given below. The following are typical instances:—*pā́t*, *padás* : πούς, ποδός—*ricán*, *áricam* : λιπών, ἔλιπον—*çrávas*, *çrutás* : κλέος, κλυτός—*vidvā́n*, *vidúṣī* : εἰδώς, ἰδυῖα. The chief exception is the finite verb. In the finite verb, and in all words where the historic accent would stand before the antepenultimate syllable, a new law comes in by which the accent may not recede beyond the last three *morae*, or in the case of words with a trochaic ending the last four *morae*. But just as Ζεὺς ἥμιν is the enclitic form of Ζεὺς ἡμῖν, where complete enclisis is impossible, so Ζεὺς δοίη is the enclitic form of Ζεὺς δοιή (Sanskrit *deyā́t*)[1]. Only the distinction between the enclitic verb in principal and the non-enclitic (orthotone) verb in dependent clauses, which is observed in Sanskrit, is lost in Greek, and here the verb is uniformly enclitic, or rather quasi-enclitic.

The accent of enclitic verb forms.

The only hindrance to the verb in Greek, as in Sanskrit, being entirely enclitic is, as has been already said, the fact that the great majority of verb-forms contain more than three *morae*. A strong confirmation of the theory here given is the fact that the only purely enclitic verb-forms in Greek, the present indicative of εἰμί and φημί, are the only forms that nowhere exceed two syllables and three *morae*. λέγω might have been accented like τινῶν, λέγε like τινί, but this was not possible with λέγομεν, λέγετε, λέγουσι. Here, therefore, we have the action of analogy: the forms not capable of enclisis have necessarily taken the recessive accent as a substitute for enclisis, and have assimilated to themselves the remaining forms of their system. φημί, εἰμί, on the other hand, admit of complete enclisis throughout.

With regard to the two apparent exceptions, εἶ and φῄς, which are orthotone, it may be noticed that εἶ is a late form and apparently only Attic; therefore its accent may be due to special considerations. The older forms, εἶs, ἐσσί are enclitic. With respect to φῄs, Wackernagel has shown that it is practically only found in relative and interrogative clauses. In the first case its accent would be consistent with the practice of Sanskrit and a solitary remnant of the primitive accent in dependent clauses; of the second it may be remarked that the accentuation of interrogative sentences, and therefore of the verb in them, is naturally more emphatic than that of ordinary discourse. The accent of φῄs in this latter case may be compared with the Sanskrit accent of the verb at the beginning of a sentence, where it is necessarily emphatic, and with the accent of the pronouns in Greek under similar circumstances, e. g. οὗτος σὲ φωνῶ (Soph. *Aj.* 1047).

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[1] Cf. ἐποίει for an earlier *ἔποιει, the augment always taking the accent in Sanskrit, but complete enclisis being impossible in Greek for the most part.

Benfey's theory.

We cannot, however, overlook the fact that φαμέν, φατέ, φασί—ἐσμέν, ἐστέ, εἰσί represent the historically correct accent of the plural (cf. p. 390) as ἔστι does that of the singular. There is some authority for accenting φῆμι properispomenon (Chandler, § 937). which would also be agreeable to the theory of primitive inflexion; and on the whole perhaps the theory of Benfey (*Vedica und Linguistica*, p. 19) is less far-fetched: that in the majority of cases φημι and εἰμι became completely enclitic, owing not merely to the number of syllables they contained, but also to their function in the sentence. εἰμι as a mere copula is naturally enclitic, for φημι we may compare the colloquial enclitics 'says I,' 'says he,' in English. Where, however, the verbs are emphatic, they keep the original accent, at any rate in the case of ἔστι, and in φῆμι if we accept the accentuation of Tyrannion. Where they are accented on the last syllable they are rather to be classed as *proclitics*, and their accent is to be compared to that of prepositions, when coming before their case (v. p. 278).

It is to be noticed that in this last case they have a grave and not an acute accent, and according to the theory of the grammarians a grave accent only indicates that this syllable on which it rests has not the acute accent, i. e. is not, strictly speaking, accented at all.

The fact that εἰμι (*sum*) is never accented on the first syllable may be due to a wish to distinguish it from εἶμι (*ibo*).

Participles and Infinitives.

It must be remarked that participles and infinitives, not being finite verb-forms, were never enclitic and therefore keep the historic accent in Greek, cf. *bháran* φέρων, *ricán* λιπών, *ruván* ὀρυύς, *babhūvā́n* πεφυώς. So with compounds, the finite verb-forms were enclitic, and threw the accent back, e.g. *sámbhara* σύμφερε, *ápi asti* ἔπεστι: the non-enclitic forms kept the historic accent, e.g. ὑπολαβών, καθῆσθαι but κάθηται.

Conflict of the historic and recessive accent.

It has been suggested, as an explanation of the recessive accent, that at some time in the separate existence of the Greek language a new accent arose side by side with the historic which rested uniformly on the last *mora* but two. According to this theory there would have been a time when e.g. Ἀγάμεμνον bore two accents, one the historic, which in all vocatives in Sanskrit, and therefore in the original language, rests on the first syllable, the other the recessive accent resting on the third *mora* from the end. Wackernagel supposes the recessive accent to have originated in the verb, and thence to have been extended to the noun, but for this there is hardly sufficient evidence. In any case these two accents would have come in conflict with one another. It remains for us to see according to what laws one or the other prevailed.

I. In the case of monosyllables and of disyllables with a short final, the recessive accent cannot come in, and the historic accent is therefore kept:—

e.g. *pā́t, padás, padí, pā́dam, pā́das, pā́dam, patsú.*
πούς, ποδός, ποδί, πόδα, πόδες, ποδῶν, ποσί.

In cases like this a secondary accent could never have appeared, because the forms (except in the gen. dual and plur.), never exceed two *morae*; and at no period in Greek was the accent allowed to rest on two successive *morae*. At no time therefore could there have been a conflicting accentuation such as e.g. πόδί, and the historic accent was therefore maintained.

It is noticeable that precisely those forms of this type which exceed two *morae*, i.e. gen. dual and plur., are the forms whose accentuation deviates from the normal type. We have e.g. *παίδων, πάντων* but *ποδῶν*, i.e. in these two cases the recessive accent has predominated over the historic[1].

Aeolic barytonesis.

In the case of disyllabic words the nominative may not be capable of receiving the recessive accent, but the oblique cases may. *σοφός* e.g. contains only two *morae*, *σοφοῦ* contains three. Here therefore the recessive accent arising in the oblique cases might be extended to the nominative, and *σόφου*, with the recessive accent predominating over the historic, might give occasion to *σόφος*. This is what has happened universally in the Aeolic dialect. The 'Aeolic barytonesis' is nothing but the predominance of the recessive accent over the historic, e.g. from the conflicting accentuation *πόταμός*, Attic preferred *ποταμός* but Aeolic *πόταμος*.

The difference of accent in disyllabic nominatives corresponding to a difference in meaning, e.g. *φόρος*, *bháras* beside *φορός*, *bharás* is primitive, but will be discussed later on.

II. When the recessive accent falls later in the word than the historic accent, the recessive accent prevails by the law of the three *morae*.

Thus Sanskrit	*jánamāna*	*γενόμενος.*
	jánitrī, jánitryās	*γενέτειρα, γενετείρας.*
	dámpati	*δεσπότης.*
	pívasvant	*πιήεις.*

So *ἄφθιτος*	but *ἀφθίτου*	Sanskrit *ákṣitasya.*
πότνια	but *ποτνίας*	*pátniyās.*
πάτριος	but *πατρίου*	*pítriyasya.*
ἡδίων	but *ἥδιον*	*svā́dīyān.*
πεντεκαίδεκα for	*πέντεκαιδεκα*	*páñcadaça* (cf. *ἕνδεκα*).

Specially to be noticed under this head is the question of the accentuation of compounds.

The accentuation of compounds.

For our purposes it will be convenient to classify compounds under three heads:—

(i) Determinatives, in which the first element of the compound is syntactically dependent on the last, e.g. *λιθοβόλος* = *ὁ λίθους*

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[1] But in the case of *παίδων* it may be noticed that the stem is properly disyllabic and remains so in Homer. Cf. *Τρώων* from stem *Τρωϊ-, Τρωϝ-*.

βάλλων. This class is called by the Indian grammarians *tatpuruṣa*.

(ii) Descriptives, in which the first element is an adjective or adverb describing the second, e. g. *βαθυδίνης*. These compounds are called *karmadhāraya*.

(iii) Possessives, compounds which in form are substantives but in meaning are adjectives, denoting possession, etc. of the quality given by the substantive, e. g. *ἐννεάπηχυς* = nine cubits long. These are called *bahuvrīhi*.

Now in Sanskrit those determinative and descriptive compounds whose second element is a verbal adjective in *-tá* take the accent on the first element, e. g. *hástakṛta* (*kṛtá-*), *ghóṣabuddha* (*buddhá* for *budh-tá-*). This was originally also the accent in Greek, as is proved by e. g. *ἔκδοτος*, *ἄλυτος*, etc., but in cases like *ἀποτελεύτητος* (for *ἄποτελευτητος*) the recessive accent lies nearer to the end of the word, and therefore predominates.

Similarly in the case of abstract nouns in *-ti* with an adverbial prefix, the accent originally lay on the prefix (cf. Sanskrit *sáṁgati-*). This accent is kept where possible in Greek, and so we have *ἀνάπνευσις*, *ἔκβασις*, *ἀνάβλησις*, etc., but where the original accent cannot be preserved the secondary accent comes in, as in *ἀφαίρεσις*, *ἐκπέτασις*, *ὑπηρέτησις*.

Possessive compounds in the same way originally accented the first element; and this accent is kept under the same limitations. Thus we have :—

the historic accent in	the recessive accent in
βαθύκολπος (*βαθύς*)	*μεγάθυμος* (*μέγας*).
κλυτόπωλος (*κλυτός*)	*ταυρομέτωπος* (*ταῦρος*).
χαλκόπους (*χαλκός*)	*ἐννεάπηχυς* (*ἐννέα*).
ὑπέρθυμος (*ὑπέρ*)	*λινοθώρηξ* (*λίνον*).
χρυσόθρονος (*χρυσός*)	*χρυσοπέδιλος* (*χρυσός*).

'*Mutata* and '*Immutata*.'

There was an original distinction of accent between the two great groups of compounds known as *Immutata*, or those in which the meaning of the compound is the same as that of the elements which compose it (e. g. *ἡμιτάλαντον* = half a talent), and *Mutata*, or those in which there is a change of meaning (e. g. ἰσοδαίμων='equal to a god,' not 'an equal god'). The former group comprises the descriptive and determinative compounds, the latter the possessives. *Immutata* originally accented the last element, *Mutata* the first. But after the introduction of the recessive accent, this distinction was only observed in Greek in those cases where the last element was disyllabic. We have for instance:—

Immutata.	*Mutata.*
λιθοβόλος, throwing stones.	λιθόβολος, stoned.
θυμοβόρος, devouring the heart	θηρόβορος, devoured by wild beasts.
παιδογόνος, begetting children	θεόγονος, of divine birth.
μητροκτόνος, matricidal	μητρόκτονος, slain by a mother.

But in other instances other influences come in. Compounds where the last element is proparoxytone or paroxytone with a long final, can, whether *Mutata* or *Immutata*, accent only the last element. Thus we have:—

Mutata.	*Immutata.*
ἰσοδαίμων	ἡμιτάλαντον.
καλλιρέεθρος	ψευδάγγελος.
λιπαροκρήδεμνος	αὐτοκασίγνητος.

Again, the accent of *Mutata* and *Immutata* may, in the oblique cases, become identical, e. g. μητροκτόνου is genitive alike of μητροκτόνος and of μητρόκτονος. From these two facts arose a tendency to accent all compounds alike recessively, regardless of their origin, especially where the recessive accent would fall on the first element.

The rule is that *Immutata* are accented where possible on the first element, but where this is impossible the original accent of the second element is kept, thus—

ἐπίτονος but ἐπημοιβός,
ἀπότροπος but ἐπαρωγός,
ἡμίονος but τυμβοχοή, etc.

See further on this point below, where the difference of accent is connected with the rhythm of the word.

To return to the general rule:—

Compounds with α-privative accent the prefix in Sanskrit;

this accent is kept where possible in Greek (e.g. *ἄγνωτος*), otherwise we find the secondary accent (e.g. *ἀμάχητος*).

Accent of vocatives.

Again, the vocative in Sanskrit, where accented at all, takes the accent on the first syllable, and some traces of this accentuation may be seen in Greek. Thus we have :—

μόχθηρε : *μοχθηρός* *γύναι* : *γυνή*.
Σώκρατες : *Σωκράτης* *πάτερ* : *πατήρ*.

Notice especially the vocative Ζεῦ (i. e. Ζέὺ) from a noun Ζεύς, where the accent shifts in the vocative from the second to the first *mora* of the diphthong. But in general the analogy of the nominative has predominated in Greek, especially where the accent cannot go back to the first syllable of the word: e. g. *γεωμέτρα*, Κλεόφρον like *γεωμέτρης*, Κλεόφρων.

In compounds the practical rule for accentuation is that the accent does not go further back than the last syllable of the first element. But this rule would seem to be merely the result of analogy; in most cases the recessive accent naturally fell in this place, and the regular accentuation of e. g. *βαθύκολπος*, *ὁμότιμος* became the model for *ὑπόδρα*, *τετράπος*, etc. But some cases are to be otherwise explained, e. g. *ἐπίπᾰν* is a parathetic compound, in *ἐπίσχες* *-σχες* is entirely enclitic.

III. Where the place of the historic and recessive accent coincides, the accent remains in that place. This, of course, is self-evident. Instances are :—

	θύγατερ	*πότνια*	*νέποδες*	*πίειρα*	*δώδεκα*.
Sanskrit	*dúhitar*	*pátnī*	*nápātas*	*pívarī*	*dvā́daça*.

Words with dactylic ending.

IV. Words with a dactylic ending which were originally oxytone become in Greek paroxytone.

This is a most wide-stretching and important rule. We will consider a few of the cases individually.

(*a*) Adjectives in *-ρος*, *-λος* are ordinarily oxytone, e.g. *καθαρός*, *χθαμαλός*, *παχυλός*, Sanskrit *çithirá*, *bahulá*.

But those in -*λος* if they are dactylic in form are paroxytone, e. g. *ἀγκύλος*, *ποικίλος*, *αἱμύλος*, *Τρωίλος*. There are some exceptions, as *ἀήσυλος*.

(*b*) The perfect participle in *-μένος*. Sanskrit has only one

The perfect participle passive. perf. part. in *-mānā́*, the more usual termination is *-ānā́*; but whatever the termination, the accent is always oxytone, and that this accent is primitive may be seen by a comparison of the Germanic languages, where we get *worden*, Indo-European *u̯r̥tonó*, the *t* by Verner's law becoming *d* in an unaccented syllable. The accent therefore of the part. in -μενος in Greek was most probably originally oxytone, and traces of this original accentuation are seen in the Greek proper names in -μενός (Ὀρχομενός, Σωζομενός, Στησαμενός, Φαμενός, Τισαμενός), and in the forms δεξαμενή, εἰαμενή. The normal accent however of the perf. part., as is well known, is paroxytone. This seems to be due to the fact that the bulk of these forms have a dactylic ending, and are of the type λελειμμένος (for *λελειμμενός); and the majority has influenced the accent of the minority of the type λελῠμενός.

The same principle accounts for the accent of *Immutata* compounds whose second element is a verbal adjective in ο or ε. We have already seen that the accent on the second element is primitive, but we should have rather expected it to be oxytone than paroxytone, inasmuch as the uncompounded adjective is oxytone (πατροκτόνος, e. g. is from κτονός). But the fact that the majority of such compounds are dactylic has caused the accent to pass from the last to the penultimate syllable in βοηδρόμος, πατροκτόνος, etc., and the example of these has affected forms like λιθοβόλος. But forms with a non-dactylic ending (cf. p. 274) as a rule remain oxytone, e.g. ὀλβιοεργός ($\smile - \acute{\smile}$). Precisely the same is the case with substantival compounds of the descriptive and determinative class. In θυοσκόπος, e. g. the element σκοπός is oxytone when uncompounded; in composition the word becomes paroxytone by virtue of its dactylic ending. The predominance of words with this rhythm has then affected the accentuation of this class of compounds as a whole, and so we have δημοβόρος, αἰσχρολόγος, ἀρτοκόπος, δειπνολόχος, etc. on the analogy of λογογράφος, τελεσφόρος, ἑκηβόλος, etc. In connexion with this fact we may note the tendency to avoid an aggregation of short syllables in compounds, even where there is no etymological justification for the long syllable, e. g. ποδήνεμος, ὑπηρέτης, μονῶνυξ, ὑπώροφος, etc. No doubt σακεσ-φόρος is older than σακοφόρος, τευχεσφόρος than τευχοφόρος, while θυηφάγος (by the side of θυοδόκος), ἐλαφηβόλος (by the side of ἐλαφοκτόνος) may very well be compounded with feminine forms. So in ὁδοι-πόρος the first element may be a locative, cf. χαμαι-πετής. But it is of course natural that a language whose oldest literature is in a dactylic metre should show a proclivity to dactylic forms.

On the other hand, the possessive compounds, as we have already seen, were originally accented on the first element, and so naturally took the recessive accent in Greek (πατρόκτονος).

Again, it seems possible that the properispomenon in many words with a dipthhong in the penult may be traced to the paroxytone accent in dactylic words, thus :—

φαῦλος =*φαυσύλος =*φαυσυλός (cf. δαυλός=*δασυλός (δασύς).

κοῖλος =*κωίλος=*κωιλός (cf. κῶς).

δαῖρος =*δᾱϜίρος.

ὁμοῖος =*ὁμωίος (ὅμως).

φοῖβος =*φωίβος (φῶς, cf. στραβός, στιλβός, ἀμορβός for original accent of termination -βος).

γελοῖος =*γελωίος (*γέλως).

Further, we may notice the accentuation of the following groups of words :—

Adverbs in -ίκα, αὐτίκα, τηνίκα, etc., as contrasted with oxytone adjectives in -κός (λογικός).

Adverbs in -κις, πολλάκις, ἑξάκις, etc.

Pronominals in -λίκος, ἡλίκος, πηλίκος, etc.

Nouns in -ίος, νυμφίος, πλησίος, ἀντίος, μυρίος, etc.

Diminutives in -ίον, χωρίον, χρυσίον, παιδίον.

Miscellaneous words of dactylic rhythm, e. g. καρκίνος, παρθένος, ἠρέμα, ἀτρέμα, ὀστέον, etc.

It may be noticed however that in Homer dactylic proper names are proparoxytone, e. g. Ἴφιτος, Φήμιος, Καλήσιος, while it is those of a tribrachic rhythm that are paroxytone, Τυχίος, Ὀδίος, etc. (v. Monro, *H. G.*, § 129).

A further striking example of the dactylic law is seen in the system of noun inflexion. We have already shown that the 'weak cases' were originally accented on the last syllable, and this accent is maintained in the case of disyllabic forms; where however the forms are trisyllabic the accent becomes paroxytone, and we get *ὀφρύος*, *ἀστέρος*, *πατράσι* (for older **ἀστερός*, **ὀφρυός*, **πατρασί*), the accent being shifted owing to the rhythm of the word (contrast the accentuation of *ποδός*, *τρισί*). It would, however, be too much to deny in these cases the influence of the nominative and the tendency to keep the accent in oblique cases on the same syllable, a principle which we have already seen operative in the vocative.

Anastrophe in prepositions.

Anastrophe in prepositions may most suitably be discussed under this head. We have seen above that the varying accent in e.g. *σοφίας πέρι* and *περὶ σοφίας* is due, not to any difference in the word itself, but solely to its position in the sentence, that it is a case, that is, of sentence-accent and not of word-accent. The problem is whether the proper accent is that which appears in anastrophe or not.

On the whole, perhaps the strongest evidence on the subject is the fact that the Sanskrit *ápa*, *ápi*, *úpa* are paroxytone, and therefore correspond to the Greek *ἄπο*, *ἔπι*, *ὕπο*. The arguments adduced for supposing the original accent to have been oxytone, or in support of the hypothesis that prepositions were originally unaccented, are hardly strong enough to counterbalance this fact. It is argued that anastrophe only occurs, according to the best grammarians, when the preposition comes immediately after its case, whereas we should have expected the original accent to be preserved where the preposition was most independent. But the fact that the grammarians differ shows that little weight is to be attached to this argument. Again, the difference of accentuation in elision before a pause, as *τούτων πάρ'*· compared with that in *τούτων παρ' ἦλθεν* does not come to much, as the latter would naturally be assimilated to *παρῆλθεν* as a single word. From the idea that monosyllabic prepositions do not suffer anastrophe, it has been supposed that all prepositions are properly toneless; but the best authorities are in favour of writing *κακῶν ἔξ* (Chandler, § 913). The case of prepositions of more than two *morae* is discussed below.

κατά, *μετά* are not found in Sanskrit, but the accent of the latter seems vouched for by Gothic *miþ* (i. e. *μέτα*).

ἀμφί is Sanskrit *abhí* and keeps the primitive accent. The same may be said of *ὑπείρ*, i. e. **ὑπέρι̯*, Sanskrit *upári*; *ὕπερ* may owe its accent in anastrophe to the analogy of *ὕπερος*, Sanskrit *úpara*.

ἀντί is Sanskrit *ánti*, but the German *and* vouches for an Indo-European *antí*.

διαί, *ὑπαί*, *παραί* were obsolete in the days of the grammarians, and we can attach no great value to their evidence on these words. The -*ι* is mysterious, but we may perhaps compare *οὑτοσί*, *ὁδί*, in which case the accent would seem to be primitive.

ἀνά, *διά* are said never to retract the accent, the reason alleged by the grammarians being a wish to avoid confusion with *ἄνα* (from *ἄναξ*) and *Δία*. But Hermann (*ad Eur. Med.* 1143) holds this to be a fiction of the grammarians as far as regards *ἀνά*, while in *διά*, if it is an instrumental, the accent would be primitive. A further argument for prepositions being originally paroxytone is seen in their accentuation when used adverbially, e. g. *πέρι* when = *περίσσως*, *ἄνα* = *ἀνάστηθι*, *πάρα* = *πάρεστι*, etc. (Chandler, § 917).

All this points to prepositions being in themselves for the most part paroxytone, but when they occur before their cases, *proclitics*: so that *περὶ σοφίας* is parallel to *ποῦ ἐστὶν ὁ ἀνήρ*; *σοφίας πέρι* to *ἔστι θεός*: the preposition in the latter case being added as it were as an after-thought, to explain more fully the meaning of the case. (Compare the accent on prepositions in Latin, p. 285.)

Monosyllabic prepositions, when proclitic and occurring before their case, have no accent; and *ἐκ κακῶν* is parallel to *ὁ ἀνήρ* (though neut. *τό* and the oblique cases and Sk. *sá* throughout are orthotone), but *κακῶν ἔξ* to *θεὸς ὥς* beside *ὡς θεός*[1].

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[1] It may be noticed that even the grave accent on prepositions disappears

In the same way the grave accent on the final syllable of *τινὸς, τινὶ, τινὲς, τινὰ,* etc.—*ποθὲν, ποθὶ, ποτὲ*—*ποιὸς, ποσὸς, ἁμὸς, ὁτὲ, τοτὲ*—*ἐμὸς, τεὸς, σφεὸς, ἀμμὸς, ὑμμὸς* is to be looked upon as a case of proclisis. The non-enclitic form is seen in *τίνος, πόθεν* (cf. *ἄλλοθεν*, Sanskrit *ádha*), *πόθι* (cf. *αὖθι*, Sanskrit *ádhi*), *τότε, ὅτε*, etc. Some of these forms may be completely enclitic, but complete enclisis is impossible in the oblique cases of *ἀμμὸς, ὑμμὸς*, and *ἐμὸς* may have followed their analogy or that of *ἐμοῦ*. But where the enclitic word contains more than two syllables, the recessive accent comes in, and *ἡμέτερος, ὑμέτερος, σφέτερος* are accented like *φεροίμεθα*.

V. Finally we have to consider the case where the historic accent lies nearer the end of the word than the secondary accent. In this case, however, no law has as yet been obtained; sometimes one, sometimes the other accent predominates, according to principles which are so far obscure.

An instance or two will suffice.

The historic accent appears, e. g. in—

	ἑκατόν	*ἐννέα*	*γενετήρ*	*ἰθαρός*	*παχυλός*	*ἐρατός.*
Sk.	*çatám*	*náva*	*janitár*	*vīdhrá*	*bahulá*	*ratá.*

On the other hand we have the secondary accent in—

	εἴκοσι	*τέταρτος*	*τρίπους*	*ὄνομα*	*θυγάτηρ.*
Sk.	*viṅçatí*	*caturthá*	*tripā́d*	*nā́man*	*duhitā́.*

An interesting case of the survival of the historic accent in Greek, though not coinciding with the secondary accent, is the accentuation of the second aorist infinitive. The Sanskrit thematic infinitive in *-dhyāi* in the majority of cases accents the thematic vowel (Whitney, *Sk. Gr.*, § 976), and this accent is preserved in Greek in the second aorist (e. g. *γενέσθαι*), though not in the other tenses.

Accentuation in Enclisis.

We may conclude by adding a word or two on the very difficult subject of the accentuation in cases of enclisis. We have already seen that the phenomena which come under the head of enclisis are cases of sentence-accent. Now the division of

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where they coalesce with their case in a parathetic compound, as in *ἐπιτοπολὺ, ἐκποδὼν, καταβραχὺ, διὸ, καθὸ, ἐπισχερὼ.*

a sentence into words is always more or less artificial; and in all languages what are in origin complete clauses, or at any rate phrases, come to be as it were stereotyped, and are pronounced and even written as one word. We need only instance cases like *ἐκποδών*, *quamvis*, *quamlibet*, *notwithstanding*, *albeit*, etc. But the word-group as well as the individual word has its principal accent, which will vary according to the function or position of the group in relation to the surrounding groups. It is very probable, therefore, that no hard and fast rules can be laid down for the accentuation of these word-groups: the so-called 'enclitic' words were possibly not toneless under all circumstances, and indeed they are written orthotone even in modern editions when emphatic or occurring at the beginning of a sentence or clause (Chandler, § 945, etc.), and the rules that we find in the grammarians may be generalisations from particular instances of laws not really of universal application. Consistent with this supposition is the fact that the statements of grammarians on the subject of enclisis are irreconcileable with one another. The lists of enclitics are variously given, and the rules of accentuation appear under different forms. When we find one authority making *ἐστον* enclitic, while another says it is orthotone; when Aristarchus writes *ἄνδρα μοι* but Herodian *ἄνδρά μοι*, the natural inference is that both are right, but neither exclusively so: that one form represents the accentuation prevailing under one set of circumstances, the other that prevailing under different conditions.

Amid this variation between our authorities one or two facts are yet universally acknowledged. No enclitic is of more than two syllables, and, with the exception of *τινων*, *τινοιν*, *σφεων*, the last syllable is always short. And in the case of these exceptions it is to be noticed that they are not, like *που*, *ποτε*, *ποθι*, etc., isolated words, but form part of an inflectional system; so that it can hardly be doubted that their accent, or rather want of accent, is the result of the analogy of *τινος*, *τινες*, *τισι*, *σφισι*, *σφεας*, etc. All enclitics are of such a nature that, considering them to form one phonetic unit with the preceding word, the secondary accent of this new compound falls on the first and not on the second element. As we said above, the principle of accentuation of *Ζεύς ἐστι* is the same as that of *ἄζωστος*, that of *Ζεύς που* as that of *πάντων*.

We may notice, again, the case of the words of four *morae* not usually recognised as enclitics, but which nevertheless take a different accent according to their function in the sentence. *ἡμων*, *ὑμων*, etc., can never be enclitic in the full sense of the word; but when forming for all practical purposes part of the preceding word, they take the recessive accent, as a substitute for enclisis. *Ζεὺς ἥμων* for an inadmissible **Ζεύς ἡμων* is as much a substitute for complete enclisis as *ζυγὸν φεροίμεθα* for **ζυγόν φεροιμεθα*. And the fact that the accent does not pass to the preceding word in *ἥμων*, *ἥμας*, *ἥμῑν*, has affected the accent of the form *ἡμῐ́ν*, just as in the contrary direction *τινος* has affected *τινων*.

We may, however, notice that though the enclitic practically forms part of the preceding word, yet the combination of an orthotone word *plus* an enclitic is not one phonetic element in precisely the same sense as a single word is one. In *λυθησοίμεθα* there is nothing to prevent the full play of the law of three syllables and the recessive accent; in *σωμα τε*, *ἀνθρωποστε* the pre-existing accent of the first element of the compound has to be taken into account. The normal case of enclisis is that in which the enclitic word is completely merged in the preceding word, and the accent is either that of the first element, or, where this is further from the end of the word than the law of three syllables permits, the recessive accent. The exceptional cases are those in which the individuality of the two elements is partially preserved, and we get an accentuation either of the last syllable of the second element (*ἀνθρώπου τινός*) or of the last syllable of the first (*σῶμά τε*). Cases like *ἀνθρώπου τινός* are instances of the principle we have discussed above: the accent of a word which is properly toneless, but which for some reason or other comes to be accented, would seem to be oxytone: *ἀνθρώπου* *τινός* (enclitic) is parallel to *παρὰ ἀνθρώπου* (proclitic). In the case of *σῶμά τε* we may remark that no monosyllabic enclitic properly takes the accent in Greek; though this law may be in origin no more than the result of the analogy of such cases as *καλός γε*, *αὐτός φησι*, where the accent is regular.

In conclusion, we may remark that though individual cases present great difficulty, yet nothing exists to invalidate the assumption that the fundamental principle of enclisis is the law of the three syllables, and that the apparently abnormal cases of accentuation that occur are due to circumstances preventing that law being fully carried out. Individual points have yet to be cleared up: no explanation is as yet offered of the change of an acute accent to a grave on final syllables in the middle of a sentence, nor of the difference between the value of syllables for purposes of metre and of accentuation (*λέλυται*, metrically ⏑ ⏑ –): but, nevertheless, in Wackernagel's theory of the recessive accent and in the recognition of the validity of the law of three syllables in cases of enclisis, we have a satisfactory basis for a complete and scientific theory of the subject.

Accentuation of Latin.

It remains that we should say a few words on the subject of accentuation in Latin.

The Latin system of accentuation stands in strong contrast to the Greek. It is true that the law of three syllables is common to both languages; neither in Latin nor in Greek does the main accent recede further than the third syllable from the end of the word, but in all other respects the two systems are totally distinct. Their main differences are two:—

(i) In Latin the quantity of the penultimate syllable determines the accent, that of the final syllable being of no importance: in Greek the quantity of the final syllable determines the accent, that of the penult being of no importance.

(ii) Oxytonesis is unknown in Latin, except where a paroxytone word has lost its final vowel, e.g. *audín* for *audisne*.

The law of Latin accentuation is simply that the main accent falls on the penult if the penult is long, otherwise on the antepenult. Monosyllabic words have the acute, if the vowel is naturally short; the circumflex, if it is naturally long. It is clear, then, that in Latin what we have called the historic accent has completely disappeared, and its place has been taken by the recessive accent, whose position, however, is determined by conditions quite different from those operating in Greek. Nevertheless there are not wanting indications that the historic accent must once have existed in Latin, though disappearing before the beginning of literature.

The weakening of vowels in composition and reduplication—a phenomenon unknown to Greek—can point only to a primitive accent on the reduplication or prefix. Thus *tétigi tetígimus* must go back to an original *tétigi tétigimus*; for the stem being *tag-* (τεταγών), the *a* could never have been weakened to *i* under the accent. Similarly, *péiero*, *confício*, *cógnitus* cannot have come from *peiúro* (supposing this to be the derivation), *confácio*, *cognótus*. Rather in these cases the original accent was on the prefix, the verb itself being toneless (cf. Sk. *ápi asti*, Gk. ἔπεστι, κάθηται, ἔμβατος, v. p. 271), and it is then drawn forward wherever necessary, in compliance with the law of three syllables.

Again, the syncopated forms of many words point to an original accent further than the third syllable from the end of the word. *Óptimus* shows that the older *ópitumus* could not have been accented on the antepenult, as the accented vowel could never have been lost. Similarly *súrgere* implies *súrregere*, not *surrégere*—*súrpui* implies *súrripui*—*Sámnium*, *Sábinium*—*bálneum*, *bálineum*—*réccidi*, *rececidi*, etc.

Finally, the statement of Aulus Gellius (13. 25), that the vocative of *Valerius* was *Váleri* (for **Válerie*), might be taken as proof in Latin of the same shifting of the accent in the vocative to the first syllable of the word that we have already seen (p. 275) to be characteristic of this case in Sanskrit, and of which one or two traces remain in Greek.

Enclisis occurs in Latin in the case of *-ne*, *-ve*, *-que*, etc.; but the rule of accentuation is simply that the accent rests on the last syllable of the orthotone word (e. g. *rosáque*), whose proper accent is completely lost.

Prepositions are said to be proclitics when coming before their case, but otherwise orthotone: *circa moénia*, but *moénia círca.*

Enclisis. Enclisis occurs in Latin not merely in those cases where, as stated above, the accent of the finite verb is thrown back upon the prefix, but also in cases like *sítumst*, where *est* is enclitic exactly as ἔστι is in the Greek καλόν ἐστι. The same principle will also explain *póssum* (*pótis-sum*), *nón-vis*, *má-vis*, etc.

Again, we have primitive enclitic pronouns and particles preserved in *sí quis* (cf. εἴ τις), *núm quis*, *né-que* (cf. οὔτε), *utérque*, *hí-c*, *sí-c*, *altérve* (cf. ἤ-ϝε), *né-dum*, etc. Possibly, too, we may see enclisis in the case of some prepositions when following their case, e. g. *quócum*, *parúm-per*, *sém-per* (cf. Umbrian *trio-per* = '*per tria*,' '*ter*'): but this may be a purely Italic treatment of the prepositions, and is not necessarily at variance with the theory given above.

Other cases which may be put under the head of enclisis, inasmuch as the whole phrase in each case is accented as if it were one word, are *prófecto* (*pró facto*), *íllico* (*ín loco*), *dénuo* (*dé novo*), and, most interesting of all, '*igitur*,' which has been recently shown (*K. Z.* xxvii. 550) to be the enclitic form of '*agitur*,' originating in the common Plautine phrase (*Quíd agitur?*) *Quíd igitur?* It retains traces of its enclitic origin in classical Latin, in the fact that it cannot, as a rule, begin a clause.

The rule for the accentuation in enclisis in classical Latin is simply that the accent rests on the last syllable of the word before the enclitic, e. g. *tantóne.* But *tantóne* is for *tánto-ne*, according to the ordinary laws of Latin accentuation. In

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cases like *tantắne*, where the accented syllable is short, we must probably see an extension by analogy of the accent of the more numerous cases of the type *tantóne* ; *tántăne* would be more natural.

Where the enclitic disappears as a separate syllable the accent remains on the last syllable of the new word—*illínc* for *illim-ce*, *audín* for *audís-ne*, etc.

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our results are in most cases purely conjectural. Our instances are mostly taken from Victor Henry's work on *l'Analogie grecque* (Paris, 1883).

Parisyllabic stems.

Parisyllabic stems as paroxytone keep the accent on the stem, and therefore, though there may be an alternation in the final vowel, it is never lost (De Sauss. p. 203).

Stems in *o(e)*.

The chief thing to notice here is the alternation of *ŏ* and *ĕ* in the final vowel of the stem. The question is a difficult one, but it is most probable that the nom., acc., dat. and abl. sing. and all the dual and plural show *-ŏ*, the vocative, loc., gen. and instr. sing. show *-ĕ*.

	Singular.	*Plural.*
Nom.	*equo-s, jugo-m*	*equo-es, juge-ā.*
Voc.	*eque, jugo-m*	(wanting).
Acc.	*equo-m*	*equo-ms, juge-ā.*
Loc.	*eque-i*	*equo-su̯e.*
Gen.	*eque-si̯o*	*equo-om.*
Dat.	*equo-ai* (?)	*equo-ei̯s.*
Instr.	*eque-a*	*equo-bhiəms.*
Abl.	*equo-ed* (?)	

Locative.

The singular presents no difficulty till we come to the locative. *Dom-i* points to an ending *-ei* rather than *-oi* (cf. *alternei* (?) *Carm. Arv.* as a loc.), in which case in Greek the truer type will be πανδημε-ί, while οἴκο-ι, etc., get *o* from the other cases.

Genitive.

The true gen. is missing in Latin in the *O*-declension. The form found is phonetically identical with the locative, and may possibly be an extension of the usage of this case.

Dative.

The dative in *-ŏ-ai̯* (?), *-ō-i*, *-ō* is found in Old Latin as *-oi* (*populoi Romanoi* quoted by Marius Victorinus). The final *-i* disappears in Latin, but survives as ι *subscriptum* in Greek (ἵππῳ).

Instrumental.

The instrumental may appear in *illāc* (*ille-a-ce*), etc., which in this case will not be feminine. That the *a* was originally short is proved by Greek ἄμ-ᾰ, πεδ-ᾰ́, etc.

Ablative.

The ablative *equŏ-(e)d* becomes *equō-(d* The *-d* is found constant in the oldest inscriptions (e.g. that of Duilius and the *Sc. de Bacch.* where '*in agro Teurano*' ad fin. is a later addition). It disappears about the sixth century, but was preserved in legal forms, and as an archaism in Ennius and Plautus (but cf. e. g. *absentĕ te Most.* 1139). In the MSS. of Plautus it is only preserved in *med*, *ted*, (*sed*), and many of the places where it was supposed to be found have been altered by Fleckeisen, Brix, etc. (cf. *Trin.* 10, 540, 726, *M. G.* 4, *Stich.* 216, *Bacch.* 428, 941). It also survives in *antid-ea*, *postid-ea*, *anted-hac*, *prod-ambulare*, *prod-est*, *se-d*, *red-itus*. But it is only seen in *A*-, *O*- and *U*-stems, not in *E*-stems. *Facilumed* in *Sc. de Bacch.* is the only instance of an adverb.

It would seem probable that there was originally a vowel before the *-d*, as otherwise the long final syllable is hard to account for, though it has been supposed to be on the analogy of the *A*-stems (*M. U.* ii. 208). If the vowel existed, its nature is quite uncertain.

Nominative plural. The termination *-i* of the nom. plural of this declension in Greek and Latin comes from the pronominal system, possibly on the analogy of the neuters, the relation *is-tă* : *jug-ă* producing *is-tī* : *eq-uī* (Henry, *Anal. grecque*, p. 232). On the original *-ā* of the neuters see p. 62.

On the gen. in *-rum*, which has supplanted the true gen. in *-ŏm* (*de-um*, *fabr-um*, etc.), v. p. 339.

Dative. The loc. plur. does not appear in Latin. The form *equīs* (*equeis*) may be dative; *equoeis* would give *equōis*, *equŏis* (cf. *ἵππωις, ἵπποις), which by a later change becomes **equeis* and *equīs*. An older form survives in *ab oloes* (Paul. *Fest.* 19). Osthoff says that *oi̯* (*oe*) in unaccented syllables regularly becomes *ī*, which will explain the nom. and dat. (*Z. G. d. P.* 198). The abl.-instr. does not appear in *O*-stems.

A-stems.

Nom.	*mensā*	*mensā-es.*
Voc.	*mensă.*	
Acc.	*mensām*	*mensā-ms.*
Loc.	*mensăi* (?)	*mensā-su̯e.*
Dat.	*mensā-ai̯* (?)	*mensā-ei̯s.*
Gen.	*mensă-əs*	*mensā-om.*
Abl.	*mensā-(ə)d*	*mensā-bhi̯ams.*

Very little in the above scheme can be considered certain. One law seems to run through it, that where the *O*-declension has *ŏ* as the final vowel, this has *ā*; where that has *ĕ*, this has *ă* (De Sauss. pp. 93, 135, 217, Brug. *Stud.* ix. 371)[1].

With regard to this declension, it seems probable that *ăi̯* in an unaccented syllable becomes *ī* (cf. *caedo* beside *cóncīdo*), *āi̯* under the same conditions becomes *ae* (*Z. G. d. P.* 199), hence dat. sing. *mensā-ai*, *ménsāi*, *ménsae*. In this case *ménsīs* can only come from *ménsā-is* through *ménsăis*, *ā* being shortened on the analogy of *équŏ-is* (*equīs*). But in the nom. plural the form must have been *mensā-i* (not shortened to *mensă-i*, **mensī*) according to the proportion *equŏ-m* : *equŏ-i* = *mensā-m* : *mensā-i*. But further, -*ăi̯* accented becomes -*ae*, and so *hắ-i̯* = *hae*, and the analogy of such forms may have been extended to polysyllabic pronouns and eventually to substantives. However the nom. plural may be dual in origin (*K. Z.* xxvii. 199).

As to the gen. of *A*-stems, the oldest form is -*as* (*Latonas*, *vias*, etc. in Liv. Andr., Enn., Naev.; *Alcumenas*, Plaut. (?) *Amph.* arg. 1; always in *pater*-, *mater-familias*. It may also survive in adverbial gen. *alias*, *alternas* (Fest.), *utrasque*, etc. (cf. *intervias* *Aul.* 377, etc.) We also find -*ais*, *ai*, the last of which is common in Oscan in masc. stems, though feminines have -*as*. The termination -*āī* early went out of use, and even in Plaut. is an archaism; e. g. *M. G.* 103, a caricature of the style of public documents. According to Nigidius (Gell. 13. 26), the gen. is *terrai*, the dative *terrae*, but this was merely a graphic distinction (cf. Quint. 1. 7. 18).

A gen. in -*aes* only appears in plebeian inscriptions, mostly in women's names (*Pesceniaes*, *Laudicaes*).

The other cases have been discussed above.

Imparisyllabic inflexion.

In the imparisyllabic inflexion the primitive forms with the Ablaut in declension leave traces only in Greek and some of them have been discussed above. Latin has extended either the strong or the weak form throughout.

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[1] Cf. in compounds *ἱππό-δαμος* beside *νικᾱ-φόρος* and voc. *ἵππε* beside *νύμφᾰ*.

Nom.	*i̯éu̯g-s* (strong inflexion)	con-jux.
Acc.	*i̯éu̯g-m̥*	con-jŭg-em.
Loc.	*i̯éu̯g-i.*	
Dat.	*i̯ug-ai*	con-jŭg-i.
Gen.	*i̯ug-əs*	con-jŭg-is.

Latin has universalised here the weak stem.

Themes containing an *ŏ* that cannot be lost change *ŏ* to *ĕ* originally in the weak cases (*K. Z.* xxv. 14):—

pōd-s (strong inflexion)	pēs.
pód-m̥	pĕdem.
pód-i or *péd-i.*	
ped-ái or *pd-ái̯* (*bd-ái̯*)	pĕdi.
ped-əs or *pd-ós* (*bd-ós*)	pĕdis.

Latin has universalised the vowel of the weak cases, Greek that of the strong. The form of the dat. and gen. may have been originally *pd-ái̯* (*bd-ái̯*), *pd-ós* (*bd-ós*), cf. Zend *fra-bda*, Greek *ἐπί-βδαι* (*K. Z.* xxv. 59), and if this is so, the locative alone, in which the accent is doubtful (p. 324), would have originally exhibited *ĕ*.

Whether there was the same Ablaut in the case of *u̯ōq-s*, that is, whether *ὤψ*, *ὀπός*, *vōx*, *vōcis* represent an earlier *u̯ōqs*, *u̯eq-əs* can only be decided by analogy, as Indo-European *u̯o*, *u̯e* both become ordinarily Latin *vo-* (p. 189, *K. Z.* xxv. 15). Sanskrit in this word perpetuates the strong form (*vā́k*, *vā́cam*, *vācā́*, *vācé*, *vācás*, *vācí*, as against *pā́d*, *pā́dam*, *pădā́*, *pădé*, *pădás*, *pădí*), but this may be by analogy. The short vowel appears in Latin in *vŏco*.

Dūx, *dŭcis* seems more regular, as it has an Ablaut of quantity, though not, at any rate ostensibly, of quality; still *dūx* may be for *dou̯x*, *deu̯x* (cf. *douco*).

For the lengthening of the vowel in the nominative singular of these monosyllabic roots cf. p. 334.

Diphthongal stems. Of the monosyllabic themes in *éu̯*, the most remarkable is that which gives Sanskrit *dyāús*, Greek *Ζεύς*, Latin *Ju-piter*.

√di̯ēu̯-. Nom. *Di̯ēus*, Sanskrit *dyāús*, Greek *Ζεύς* for **Ζηύς*. The Latin representative would apparently be **jou̯s* **jūs*, where *di̯*

becomes *j*, a change which only takes place in this word: here too, where it is not used as a proper name, we get *dies* (=*diēu̯s*) cf. *Diēs-piter*.

It seems doubtful whether a termination *-eum* ever existed. In verbal inflexion Sanskrit has *ábhus*, *ábhut* but *ábhuvam*, avoiding **abhum*. Greek allows ἔφυν, but no word ends in -ευν except Ionic forms like ἐποίευν. So we should perhaps expect an acc. *Di̯ēu̯m̥*, the *m* becoming sonant. But even of this there is no trace in Sanskrit or Greek, which have *dyā́m*, Ζῆν-(*a*), (Ζήν). This would represent Indo-European *Di̯ēm*, which may survive in Latin *diem*. In Sanskrit the oblique cases have a double stem, *dyo-* and *dyu-* (before vowels *div-*). Thus we get *dívam*=ΔίϜα and *dyām*=Ζήν. *Di̯ēu̯m̥* is not represented in Greek (it would become *Ζευα), but exactly corresponds to Latin *Jovem* (*jou̯-m̥*) (p. 87). The Latin inflexion is based on this strong stem *jov-*, so that we even find a new nom. *Jovis* formed as from an *I-* stem (cf. *nāvis* : ναῦς, p. 348). For comparison, we may put side by side the Indo-European, Sanskrit, and Greek forms of the other cases:—

Loc. *Di̯ēu̯-i*,	Sanskrit *diví*, *dyávi*	Διί.
Dat. *di-u̯-ai̯*	*divé*, *dyáve*.	
Gen. *di-u̯-əs*	*divás*, *dyós*	Διός.

diu is perhaps an instrumental, and may be compared with the Sk. instr. *divā́*, as *diutinus* answers to the Sk. *divā́tanas* (*K. Z.* xxv. 59). *Dis* possibly stands for *Diu̯s*, and *biduum* for *bidi̯uum*.

Nundinae perhaps is not to be connected with this stem *di̯eu̯*, *div*, but goes back to an original nom. *dei̯on*, gen. *dinós*, with which we may compare the Sk. *dínam* (*K. Z.* xxv. 23).

Take again the root *gōu̯*. √*gōu̯*.

In Sanskrit we have strong stem *gāv*, weak *gav*.

Sanskrit nom. *gāús*, Greek *βωυς, βοῦς.

acc.	*gā́m*	βῶν (H. 238).
gen. abl.	*gós*	βοός.
instr.	*gávā*.	
dat.	*gáve*.	
loc.	*gávi*	βοΐ.

In Latin we have *bōs* for **bōu̯s*, otherwise the weak stem is extended to all cases with the exception of *bō-bus* (*bōu̯-bus*), *boum* (*bou̯om*). Before vowels we should have expected *ou̯* unaccented to have become *ŭ* (cf. *dénuo*=*dé nou̯o*), but the analogy of the other cases has prevailed. *Bov-i-bus* is on the analogy of the *I*-stems. *Nāvis*, as remarked above, has become an *I*-stem, but with the strong stem throughout, corresponding to Greek *νηῦς νηός*.

Themes in *ei̯*, weak inflexion.

Nom. Sing.	*ou̯í-s*, cf.	*βάσις*	ovis.
Voc.	*ou̯éi.*		
Acc.	*ou̯í-m*	*βάσιν*	*ovim.
Loc.	*ou̯eí-i*		ovi.
Dat.	*ou̯ei̯-aí̯.*		
Gen.	*ou̯ei̯-əs*	*βασει̯-ος, βάσεως.*	
Nom. Plur.	*ou̯ei̯-es*	*βασει̯-ες, βάσεις*	ovēs.
Acc.	*ou̯i-ms*	*βασι-νς*	ovīs.
Gen.	*ou̯ei̯-om*	*βασει̯-ων*	ovium.
Abl.	*ou̯i-bhi̯əms*		ovibus.

The accus. sing. *ovem* is on the analogy of the consonantal stems, but cf. *partim* (beside *partem*, with differentiation of usage), *turrim* (*Aen.* 2. 224 vouched for by Gell. 13. 21, as more euphonious), *stati-m* (cf. *stati-o*), etc. In many cases the MSS. vary between *-im* and *-em.*

On the abl. and instr. of this type v. p. 341. The gen. *ovis* seems formed on the analogy of consonantal stems, the stem being taken to be *ov-* (contrast *διός*).

The nom. plural was sometimes written *-īs* on the analogy of the acc., but this is rare in the oldest inscriptions.

The acc. plural in *-is* (for *-i-ns*) is the correct form in *I*-stems, in which alone it is found, except in plebeian inscriptions. The grammarians lay down that the acc. plural in *-es* may be used both in consonantal and in *I*-stems, that in *-is* in *I*-stems only. But the question of usage was much disputed by the ancients themselves; Varro, Probus, Pliny, Charisius, Priscian, all have different theories. The philological question is clear; as to the usage we may say with Probus (Gell. 13. 20), *Noli laborare utrum istorum debeas dicere, urbis an urbes*:—*nam nihil perdes utrum dixeris.*

Themes in *eu̯*.

The inflexion of *eu̯*-stems seems weak, but there can hardly be any difference between the strong and weak inflexion of this type in Latin:—

Sing.	*gradu-s*	Plural *gradeu̯-s.*
	gradeu̯.	
	gradu-m	*gradu-ms.*
	gradeu̯-i	*gradeu̯-om.*
	gradeu̯-ai̯	*gradu-bhi̯əms.*
	gradeu̯-əs.	

eu̯ became *ou̯* in Latin, and then *u* in an unaccented syllable, so that the type at once simplifies itself. The dat. and loc. sing. both become *gradui.*

The oldest form of the gen. is *senatuos* in *Sc. de Bacch.* The next step was a form -*uis*, which Gellius (4. 16) says was always used by Varro and Nigidius in *senatuis, domuis, fluctuis.* He also quotes *anuis* from Ter. *Haut.* 2. 3. 46 (cf. *quaestuis, Hec.* 735). This becomes -*ūs*, apparently by *i* changing to *ŭ*.

But from Ennius to Lucretius we get almost regularly a gen. in -*i* from the analogy of the *O*-stems (*quaesti, Most.* 1107, *sumpti, Trin.* 250, *fructi, Adelph.* 5. 4. 16, *adventi, Phorm.* 1. 3. 2): *senati* occurs in Cic. *Div. in Caecil.* 5. 19, cf. Quint. 1. 6. 27.

Gradu-i would seem to be a locative; *gradū-(d)* is the true abl.; the form *gradu* sometimes used as a dative may be an instr. (*gradu-e*) which has come to be indistinguishable in form from an abl.

The plural presents no special difficulty. On *currūm* for *curruum* v. p. 338.

Nasal and liquid stems.

Themes in -on, -en (corresponding to those in *-tor, -ter*):—

A.	*térm-on-(s)*	*lih-én.*	B. *dṓ-tōr(s)*	*pa-tér(s).*
	term-on-m̥	*lih-en-m̥.*	*dō-tŏr-m̥*	*pa-ter-m̥.*
	term-en-i	*lih-en-i.*	*dō-ter-i*	*pa-ter-i.*
	term-n-aí̯	*lih-n-aí̯.*	*dō-tr-aí*	*pa-tr-aí.*
	term-n-ís	*lih-n-ís.*	*dō-tr-ís*	*pa-tr-ís.*

A. These have produced on the one hand *termo termōnis* with the strong termination carried throughout, on the other hand *term-i-nus*, with a *svarabhākti* vowel from the weakest stem. The weakest stem is also seen in the neuter *termen*, Greek *τέρμα* (*ter-m̥*). But as a declension with cases of varying length is strange to Latin, except in the monosyllabic stems, an original *hemo*, *hemōnem*, *hemeni*, *homnis* has been assimilated to *homo hominis*, etc., either by the analogy of the loc., or the introduction of a *svarabhākti* vowel. A trace of the original Ablaut is however seen in *hemōnes* quoted from Ennius (Paul. *Fest.* 100, Enn. *Ann.* 141 Vahl.).

B. The result in Latin in these stems has been given above (p. 297 sqq.).

emes in (-*es*).

Themes in -os (*-es*) (strong inflexion).

Oxytones of the type *αἰδώς* cannot lose *o*, so as a substitute it is changed to ἔ (cf. *πώς* **πεδός*) :—

αἰδώς	cf. *labōs.*
**αἰδόσα*	*labŏsm̥.*
**αἰδεσός* (*αἰδοῦς*)	*labesís.*

Greek has universalised *ŏ*, Latin mostly *ō*, but cf. *arbos*, *arbŏris.*

Oxytones of the type *ἀναιδής* cannot, from the nature of the case, lose the last vowel. Accordingly we get—

ἀναιδής	cf. *degenés* (cf. *εὐγενής*).
**ἀναιδέσα* (*ἀναιδῆ*)	*degenĕ́sm̥.*
**ἀναιδεσός* (*ἀναιδοῦς*)	*degenĕsís.*
**ἀναιδέσες* (*ἀναιδεῖς*)	*degenĕ́ses.*

ytone mes in

Oxytones in *-ńt* (strong inflexion) :—

λιπ-όντ-ς	cf. *s-ónt-s* (sons).
λιπόντ-α	*s-ónt-m̥* (sontem).
**λιπ-α-τός*	*s-n̥t-ís* (prae-sentis).
**λιπ-έν-τι* (?)	*s-én-ti* (prae-senti).

Cf. Sanskrit *adán*, *adatás.* Greek generalises the strong stem in *λιπών λιπόντος*, *ὤν ὄντος*, Latin the weak in *prae-sens*, *absens*, and all other pres. parts.; the strong in *sons sontis.*

Paroxytone themes in -*os*.

Paroxytones in -*os* —

I.-E.	*u̯éq-os*	ἔπ-ος	cf. opos.
	u̯éq-es-os	ἐπ-εσ-ος, ἔπους	operis.
	u̯éq-es-i	ἐπ-εσ-ι, ἔπει	operi.
	u̯éq-es-ā	ἐπ-εσ-α, ἔπη	opera.

The nom. plural may have been *u̯éq-os-a*, but no trace is left of this form.

Comparatives.

Themes in -i̯os (comparatives) paroxytone.

In Greek and Sanskrit these stems are complicated by the introduction of an *n*, which does not however appear in Latin:—

I.-E. *néu̯-io(n)s*	Sk. *návjān*,	cf. Gk. μεγ-ι̯ους	Lat. *mel-iōs*.
Acc. *néu̯-ios-m̥*	*návjānsam*	μεγ-ι̯οσα	*mel-iŏsm̥*.
Loc. *néu̯-ies-i*	*návjasi*	μεγ-ι̯εσι	*mel-iesi*.
Dat. *néu̯-ies-ai̯*	*návjase*	μεγ-ι̯εσαι	*mel-iesai*.
Gen. *néu̯-ies-os*	*návjasas*	μεγ-ι̯εσος	*mel-iesis*.

Latin and Greek have both universalised the strong stem, the former with the long vowel of the nom., the latter with a short vowel and the addition of *ν*. As a paroxytone stem the root is never reduced.

Paroxytone themes in -*nt*.

Paroxytones in -*nt* :—

φερο-ντ(ς)	Sk. *bháran*	*feront-s.
*φέρ-ατ-ος	*bháratas*	ferentis.

Latin has universalised the weak stem. The Sanskrit gen. *bháratas* (=*bhárn̥tas*) is irregular, as in a paroxytone stem the vowel ought not to disappear entirely.

Heteroclite neuters.

There are two types of Heteroclite Neuters (De Sauss. p. 223):—

(i) With strong root accented (Ablaut I or II), sometimes with the addition of *r* or *i*, e. g. *kórd*, *i̯ḗq-r*, *óqs-i* (Sanskrit *ákṣi*, Greek dual ὄσσε for ὀqσι-ε).

(ii) Weak root unaccented with the addition of the suffix -*én*, which is in its turn reduced in the weak cases, e. g. *kr̥d-én*, *kr̥d-n̥* (Gothic *hairt-ins*), *i̯eqén*, *i̯eqn̥*.

The first type forms the nom. acc. sing., and those cases where the termination begins with a consonant. In the nom. acc. it is accompanied by a *-t*.

The second type forms those cases where the termination begins with a vowel. Here the Greek, but no other language, introduces a *-t*.

Thus theoretically we have originally—

Sing. nom.	*i̯éqr̥t*	Gk. ἧπαρ(τ)	jēcr̥(t).
loc.	*i̯eq-én-i* (?)	ι̯επ-έν-ι (?)	jecini.
gen.	*i̯eq-n-ós*	ι̯επ-α-(τ)-ος	jecinis.
Plur. nom.	*i̯eq-n-ā*	ι̯επ-α-(τ)-α	*jecina.
gen.	*i̯eq-n-om*	ι̯επ-α-(τ)-ον	jecinum.

Latin has generalised the nominative form, but with the root vowel of the weaker cases, and thus has produced *jecŏris*, and by a double contamination *jecinoris*. Similarly *feminis* has produced *femen*, *femur* has produced *femuris* (v. p. 304).

CHAPTER XIII.

PRONOMINAL INFLEXION.

Deictic and Anaphoric pronouns.

THE Pronouns (ἀντωνυμίαι) were so called from the fact of their being able to stand in the place of nouns. They also distinguish persons in discourse. We have already distinguished roots into Predicative and Pronominal. The latter were few in number and deictic in meaning, and this was probably the original meaning of all pronouns. The Greek grammarians distinguished the pronouns into δεικτικαί and ἀναφορικαί. Our own terms Demonstrative and Relative come through the Latin, and have lost their original meaning. A Deictic pronoun denotes the different persons and objects in speech by their position to the speaker, e.g. *this* (*here*), *that* (*there*), etc., while an Anaphoric pronoun picks up what is already known or has been previously spoken of. Our own term Demonstrative, then, includes much that the Greeks termed Anaphoric, while the term Relative has become restricted to that class of pronouns which combine the pronoun with the function of a conjunction and serve to bind sentences together.

As far as Greek inflexion is concerned we may divide the pronouns into those which mark the distinctions of gender and those which do not.

Greek personal pronouns.

The personal pronouns do not mark distinctions of gender. The 1st and 2nd person and the singular reflexive ἕ may be regarded as inherited from the original language. The plural of the personal pronouns was originally distinguished from the singular by a difference of stem, and not by a difference of inflexion.

Thus beside ἐμέ we have the Epic plural ἄμμε,
beside Doric ἐμίν we have ἁμίν,

where the inflexions are those of the singular number. However, as the pronouns were frequently used in apposition to, or as predicates with plural nouns, they in time adopted similar inflexions. Thus instead of Aeolic ἄμμε, Doric ἀμέ, we have the Ionic ἡμέας, Attic ἡμᾶς.

The original stems, then, *n̥sme-*, *i̯usme-* (Sk. *asma-*, *yuṣma-*), were singular in form and collective in meaning, like English *host*, *folk*, *crew*, etc.

Just as in Attic ἡμᾶς has replaced an original ἡμε, so ἡμῶν has replaced an original ἡμειο, answering to ἐμεῖο (= ἐμεσι̯ο), and ὑμῶν an original ὑμειο, answering to σεῖο (= τϝεσι̯ο). The datives ἡμῖν and ὑμῖν have not pluralised their ending, but in the 3rd person beside Ionic and poetic σφί(ν) we have the prose form σφίσι(ν).

First person Nominative.

Taking the different cases in detail, we find the nominative of the 1st personal pronoun

ἐγώ Sk. *ahám*

side by side with the stems με-, μο-, Sk. *ma-*. In Homer before a vowel we have ἐγών. The origin of the termination is unknown. In Boeotian, γ was dropped and ε became ι before ο, according to the rule of the dialect. Hence ἰώ, Ar. *Acharn.* 898.

Dual.—For the stem νο- of the dual nominative νώ we may compare Lat. *nos*, Sk. *nas*.

Plural.—The aspirate of the nom. pl. ἡμεῖς, Dor. ἀμές, is due to the analogy of ὑμεῖς, where the rough breathing is regular. In Aeolic, ἄμμες. The plural ending of ἡμεῖς is a new formation, after the model of σαφεῖς, etc.

Second person Nominative.

Nom. Sing.—The nom. τύ, σύ, stem τϝε, τϝο, Sk. *tva*, and τεϝε-, τεϝο-, Lat. *tovo-*, from *teu̯o-*.

Homeric τύνη. The Doric form as given in Aristophanes is τύ. The σ of σύ has come in from other cases where τ and σ stand for original *tv*.

Nom. Plural.—The plural stem is ὑσμε-, Sk. *yuṣma-*, I.-E. *i̯u-sme-*. The Greek aspirate of ὑμεῖς is a regular representative of Sk. *y*. Aeolic ὔμμε, like ἄμμε, shows no aspirate.

Accusative.

Acc. Sing.—με, ἐμέ τϝε σέ Doric τέ.

The form *τίν* (Theocr. 12. 55, etc. *ὡς κατέδυν ποτὶ τίν*) answers to the *μίν* and *νίν* of the 3rd personal pronoun.

Acc. Plural.—Aeolic *ἄμμε*, *ὔμμε*, Doric *ἁμέ*, *ὑμέ*. The ending has been pluralised in Ionic *ἡμέας*, *ὑμέας*, Attic *ἡμᾶς*, *ὑμᾶς*.

Dative.

Dative Sing. *μοι*, *ἐμοί* Sk. *me*.
τϝοι Dor. *τοί* Att. *σοί* Sk. *tè*.

Plural.—Aeolic *ἄμμιν*, *ὔμμιν*, Att. *ἡμῖν* and *ἥμιν*, as well as *ὑμῖν* and *ὕμιν*. For the ending cf. Dor. *ἐμίν*, *τίν*, Ep. *τεΐν*.

The epic *ἄμμι*, *ὔμμι*, without *ν*, perhaps follow the analogy of *σφί*.

Dual.—In the dual *νῶ-ιν*, *σφῶ-ιν*, Att. *νῷν*, *σφῷν*, the termination *-ιν* is added to the nominative and accusative forms; cf. Lat. *ambo-bus*.

Genitive.

All the forms of the genitive are genitives of possessive stems with suffix *-σι̯ο* :—

ἐμε-σι̯ο *ἐμεῖο* *ἐμέο* *ἐμοῦ*.
τϝε-σι̯ο *σεῖο* *σέο* *σοῦ*.

Sk. *me* and *te* do duty for genitive as well as dative.

Plural.—In the plural the original *ἀσμε-σι̯ο*, *ι̯υσμε-σι̯ο* were pluralised into epic *ἡμείων*, *ὑμείων*, and Attic *ἡμῶν*, *ὑμῶν*.

Third personal reflexive pronoun.

The stem of the 3rd pers. pronoun is *σϝε-*, *σϝο-*, Sk. *sva*, and the fuller form *σεϝε-*, *σεϝο-*, Lat. *sovo-*, from *sei̯o-*.

Acc. *ϝε*, *ἕ*, and in Homer also *ἑέ*.
Dat. *ϝοι*, *οἷ*, like *ἐμοί*, and in Homer also *ἑοῖ*.
Gen. *ϝειο*, *εἷο*, *ἕο*, *οὗ*, from *σϝε-σι̯ο*, like *ἐμεῖο*.

Apart from comparison with Latin and Sanskrit, the loss of the spirants can be proved in Greek from the metre of Homer. Not only is a preceding short syllable lengthened by position, but a short vowel is lengthened in arsis before the cases of this stem (Monro, *H. G.* § 39).

The forms beginning with *σφ-* arose in all probability out of *σφι*, *σφιν*. Thus we have the plural forms *σφεῖς*, *σφείων*, *σφῶν*, *σφισι*, *σφέας*, *σφάς*, and the dual forms *σφωέ*, *σφωίν*, made out of *σφέ*, *σφίν* by the intrusion of *ω*. In Aeolic, *σφε* appears as *ἄσφε*. The word *σφε* is not, like *ἕ*, to be identified with Sk. *sva*. The origin of the stem remains unexplained. In Ionic there is a neuter plural *σφέα*.

No other Indo-European language has a plural for this pronoun, and the substantival use of the pronoun is in the Arian languages rare (Delbrück, *S. F.* iv. ch. x).

We may here notice other forms of the reflexive pronouns in Greek.

For the 1st person we have acc. sing. *ἐμαυτόν*, but for the 2nd person, beside *σαυτόν*, we have *σεαυτόν*, and for the 3rd, *ἑαυτόν*, as well as *αὑτόν*. The forms *σεαυτόν*, *ἑαυτόν* cannot well be explained as compounded of the monosyllabic *σε-* and *ἑ-* with *αὑτόν*. Under such circumstances elision or crasis of the vowels would ensue in Greek.

In Homer we have the possessive *ἐμός* and also, beside *σός* and *ὅς*, the forms *τεός* and *ἑός*: we also find *ἐμοί* beside *μοι*, and *τεΐν* and *ἑοῖ* beside *σοί* and *οἷ*: and again *ἐμέ*, *ἑέ*, as well as *με* and *ἕ*.

Now the stem of *τεός* is *τεϝο-*, *τεϝε-*, and the stem of *ἑός* is *σεϝο-*, *σεϝε-*, cf. Lat. *suus*. The reduced forms of these stems will be *τϝο-*, *τϝε-*, and *σϝο-*, *σϝε-*,

αὑτόν then stands for *σϝε-αυτον* = *σϝαυτον* = *ϝαυτον* = *αὑτόν*.

ἑαυτόν stands for *σεϝε-αυτον* = *σεϝαυτον* = *ἑϝαυτον* = *ἑαυτόν*.

In the same way *σαυτόν* (for *τϝαυτον*) comes from the reduced stem *τϝε-*, while *σεαυτόν* (for *τεϝαυτον*) comes from the fuller stem *τεϝε-*, with the change of *τ* to *σ*, as in *τύ* to *σύ* (*K. Z.* xxvii. 279).

Possessive Pronouns.

The stems of the personal pronouns were used adjectivally and declined as *O*-stems.

Thus *ἐμό-ς* for *μο-ς*, *σός* for *τϝο-ς*, Sk. *tva-*. Homeric *τεός* from stem *τεϝο-*.

Aeolic has *ἄμμος*, *ὔμμος*, and Doric *ἁμός*, *ὑμός*. The comparative formations *ἡμέτερος*, *ὑμέτερος*, Lat. *noster*, *vester*, are not primitive.

Third Person.

ϝος, *ὅς* Sk. *sva-* Epic *ἑός* Lat. *sovo-*.

Under the head of this stem perhaps comes the Homeric *ὧς*, as seen, for instance, in such phrases as *θεὸν Ϝώς*, and the neuter *Ϝοδ* in *ὅτ-τι*, *ὅτι*—*ὅπ-πως*, *ὅπως*—where the double *ττ*, *ππ* was simplified in order to correspond with *τί*, *πῶς*, etc.

σφός and *σφέτερος* are new formations on the analogy of *ὅς* and *ἡμέτερος*, while from the dual stem come the Homeric *νωΐτερος*, *σφωΐτερος*.

Second Class of Pronouns.

We now pass on to those pronouns, whether demonstrative or relative, in which the distinctions of gender are marked.

Pronouns marking distinctions of gender. ὁ, ἡ, τό.

The pronoun *ὁ*, *ἡ*, *τό* answers to the Sanskrit *sás*, *sá*, *tád*. The pronominal origin of this word is clear from the usage of Homer. There it is used as an anaphoric pronoun, and subsequently came to be employed as the definite article (Monro, *H. G.* § 257). Such is the history of our own definite article, while all the Romance languages have turned the Latin *ille* to the same purpose.

In Greek the inflexion of *ὁ*, *ἡ*, *τό* has been assimilated to that of the *A*- and *O*-declensions. Remains of an originally distinct inflexion are to be discerned in the nom. and acc. neut. sing. *τό*, which has not the regular neuter ending *-ν*. The final consonant, which is to be seen in Latin *id*, *quid*, Sanskrit *tád*, has disappeared in Greek, but remains in the compounds *ἀλλοδ-απός*, *ποδ-απός*.

The noms. plural *οἱ*, *αἱ*, for original *τ-οί*, *τ-αί* as in Doric, with which we may compare Sk. *té*, have become the model for the plural of *A* and *O* nominal declensions. The two declensions reacted on one another. Thus, while the Sanskrit has dat. sing. *tá-sm-āi*, Greek has *τῷ*, like *ἵππῳ* : in the masc. gen. pl. Greek has *τῶν*, like *ἵππων*, but Sanskrit *té-ṣām*. The fem. gen. pl. *τάων* corresponds to Sanskrit *tásām*, and is similar to the gen. pl. of the *A*-declension, e. g. *θεάων*, *θεῶν*. Doric has gen. plural *τουτῶν*, *τηνῶν*, *ἀλλῶν* (Ahrens, 2. 31), as though from **τουτό-σων*, etc.

ὅς.—The Greek *ὅς* in such phrases as *ἦ δ' ὅς* answers to Sanskrit *sá-s*.

ὅδε.—The Homeric *τοῖσδεσ(σ)ι* is an instance of double inflexion, both of the demonstrative and the suffix -*δε*: *ὅ-δε* cannot be regarded as primitive, for we are unable to find a parallel in Latin or Sanskrit.

To the same stem belong the adverbs *ὧδε* and *ὥς* (so).

τοῦτο for *τό-ὐ-τό* results from a doubling of the demonstrative connected by *ὐ*, the reduced form of *αὖ* answering to the enclitic Sanskrit *u*, a particle meaning 'further,' 'and,' etc. Sanskrit *u* often goes immediately with pronouns, e.g. *sá u* (written *só*). (Delbrück, *S. F.* iv. 10.)

ἐκεῖνος. In the inflexion of Attic *ἐκεῖνος*, epic and poetic *κεῖνος*, Aeolic *κῆνος*, there is nothing to notice. The diphthong -*ει*- is not original, and before the archonship of Eucleides was represented on Attic inscriptions by -*ε*-.

αὐτός. The origin of the oxytone *αὐτός* is unknown; its declension resembles that of *ὁ*, *ἡ*, *τό*. As to the absence of -*ν* in the nom. and acc. neut. sing. it may be remarked that this -*ν* was early added to some words, as for instance in Homer we have only *τοιοῦτον*, *τοσοῦτον*.

There is a gloss of Hesychius, *αὖς· αὐτός. Κρῆτες καὶ Λάκωνες.* This *αὖς*, which appears on inscriptions, is explained as a reduction of *αὐτός*, occurring especially where another case of the same word follows, e.g. *αὐτὸς αὐτάς* passed to *αὐσ-αὐτάς*.

ὅς. The relative *ὅς*, Sk. *yás*, I.-E. *i̯os*, has nothing noticeable in its inflexion.

Interrogatives. The I.-E. stem *qo*- appears as *πο*- in *ποῖ*, *ποῦ*, *πῶς*, *πότερος*, *πόσος*.

The I.-E. *qe*-, Sanskrit *ká*-, Latin *quo-d*, appears as *τέ*- in Ionic *τέο*, *τέῳ*, *τέων*, *τέοισι*, Attic *τοῦ*, *τῷ*, *τοῖσι*. In Hesychius we find *τεῖον· ποῖον. Κρῆτες.*

In the Ionic dialect *πο*- is represented by *κο*- (cf. p. 126).

The *ε* of *τέων*, *τέοισι*, etc., has not sprung from *τι̯*-, as can be seen by comparing *ἅσσα*, *ἅττα* (where *σσ*, *ττ*, represents -*τι̯*-) with the forms *ὅττεο*, *ὅτεο*, etc.

With *τέο* we can compare the forms *ἐμεῖο*, *ἐμέο*. To Gk. *τε*- answers Lat. *que*-; to Gk. *πο*- answers Lat. *quo*; while to Gk. *πῆ*, *πῇ* answers Lat. *qua*- of the fem.

The composite ὁ-πο- and ὁ-κο- are to be found only in isolated forms, e. g. ὅπου, ὅπως. If these are derived from ὅς-πο-ς the first component is undeclined. ὁπο-

The demonstrative δεῖνα, used by Plato, Demosthenes, and the later Attic writers generally, is to be connected either with the -δε of ὅ-δε, etc. or the δε- which appears in δεῦρο, δεῦτε. δεῖνα.

Gk. τίς, interrogative as well as indefinite (cf. p. 264), Lat. *quis*, has in the Greek inflexion a nasal which does not appear elsewhere. The stem τι- is to be found in Ion. ἄσσα, Att. ἄττα. Original τι̯α, passed to σσα, ττα, and the prefixed α is due to the fact that σσα, ττα occur only after neuter plurals ending in α, e. g. Ar. *Ran.* 172 πόσ' ἄττα; for πόσα ττα; τίς.

The stem τι- also appears in the dat. pl. τισι. The ν of the other cases was probably extended from the acc. sing. τινα. The regular accusative would be τιν, but just as Ζῆνα with a doubled accusative ending rose out of Ζῆν and led to a new formation Ζηνός, so out of τιν came τινα, and led to the inflexions τινος, τινι, etc.

The adjectival τόσος, πόσος, and ὅσος answer to indeclinable words in Sanskrit and in Latin. Thus τόσος, Lat. *tot*, Sk. *táti*; πόσος, Lat. *quot*, Sk. *káti*; ὅσος, Sk. *yáti*. They have probably been formed from indeclinable words, which have now disappeared in Greek, by the addition of the suffix -ι̯ο. τόσος, etc.

As pronominal in origin we must regard the adverbial suffixes -θεν, -θι, -θα, -κι. To -θεν, as in αἰνόθεν αἰνῶς, and -θι, as in ἠῶθι πρό, we can find no parallel in the cognate languages. With -κι, as in οὐκί, πολλάκι, we can compare A.-S. *hit*, the neuter of *he*. Suffixes.

The stems of the Latin personal pronouns are *me-*, *tu̯e-*, *su̯e-*, *nŏ(s)-*, *vŏ(s)-*. Pronominal Declension in Latin.

1st Person, *egŏ*, orig. *egō* for **egōn*; cf. ἐγών, Sk. *aham*.

2nd Person, *tū*. The long vowel, which also appears in Hom. τύ-νη, represents the accented form of the reduced root, or else is due to its being monosyllabic (p. 146). Personal Pronouns. Nom. Sing.

The Gen. Sing. *mis*, *tis*, (*sis*) are enclitic forms (Neue, ii. 178), Gen. Sing.

as compared with ἐμ-οῦ, which contains the original root vowel. They are apparently later formations with the *-s* of the gen. of the substantival declension, and to be compared with the forms ἐμέος, ἐμεῦς, ἐμοῦς, beside ἐμέο (*K. Z.* xxvii. 414). The ordinary gen. *mei*, *tui*, *sui*, like *nostri*, *vestri*, are genitives of the possessive adjectives, a substitution which also appears in Old Irish and Lithuanian; cf. also τεοῖο (Θ. 37. 468, etc.).

Dative Sing.

Dat. Sing. *mi* (*me* in Ennius, according to Fest. 161; but v. Neue, ii. 180, sq.) seems to be an enclitic form, Sk. *me*, Gk. μοι, but may as well be a contraction for *mihi* as *nil* for *nihil*. On the ordinary forms *mihi*, *tibi*, *sibi* (also written *mihei*, *mihe*, *sibei*, *sibe*, etc.), cf. p. 342.

Acc. Sing.

Acc. Sing. *mē*, *tē*, Sk. *mā*, *tvā*, lengthened as monosyllables; *mē* is enclitic (cf. με) as contrasted with ἐμ-έ. The termination *-d* found in the accusative in Old Latin is due to a confusion with the ablative (*Z. G. d. P.* 128). The form *mehe*, quoted by Quint. 1. 5. 21, is noticeable.

Abl. Sing.

Abl. Sing. *mē-(d)*, *tē-(d)*, Sk. *mát*, *tvát*. *Se-d* has become a preposition (*sed fraude* in Inscr., *sed-itio*, etc.) or conjunction. *Sine* may be for **sedne*. It is true we should have expected **sēne* (as *cacūmen* = Sk. *kakúdmant*), but as a preposition it would be unaccented (p. 279) and the vowel shortened.

Nom. and Acc. Plur.

Nom. Acc. Plur. *nōs*, *vōs*, Sk. *nas*, *vas*; *e-nos* (*Carm. Arv.*) may be explained as *e-quidem*, *e-nim* (*nam*), or even as ἐ-μέ, if ε is not radical but on the analogy of ἐ-γώ.

Gen. Plur.

Gen. Plur. *nostrum*, *vestrum* are used partitively, otherwise *nostri*, *vestri*. *Nostrum*, etc., shows the gen. in *-om*; the fuller form is seen in *maxima pars vostrorum* (Plaut. *Most.* 280); *neutram vostrarum* (*Stich.* 141), etc. (*K. Z.* xxvii. 403; Neue, ii. 185; Bücheler, p. 89); cf. *di quorum est potestas nostrorum*, in a formula of prayer in Liv. 8. 9. 6. In classical times *nostrum*, *vestrum* became substantival, *nostrorum*, *vestrorum* adjectival, but *suorum* remained substantival owing to the ambiguity of *suum*.

Dat. Abl. Plur.—For *nōbis*, *vōbis* cf. p. 342. Paul. *Fest.* 47. quotes a form *nis* (for **no-is*, cf. νῶι).

Possessive Pronouns.

Meus, *tuus*, *suus*, for *mei̯os*, *teu̯os*, *seu̯os*, correspond to ἐμέο, τεός, ἑός. But it is probable that there originally existed two distinct forms: an accented form *teu̯os*, *seu̯os*, whence τεός, ἑός, *tuus* (older *tovos*), *suus* (older *sovos*): and an enclitic form *tu̯os*, *su̯os*, whence σός, ὅς. Old Lat. has *sos*, *sas*, *sis* (Lucr. 3. 1025, Neue, ii. 189), also *sa-psa*, *sua-d* (=*sic*, Fest. 351),; *si*, *nisi*, *sic* (=*sei-ce*) are locatives or datives. *Si* (Oscan *svaí*) represents the unaccented form of a proclitic; under the accent it would become *svæ* or *sæ* (p. 79).

For the termination in *nos-ter*, *ves-ter* cf. ἡμέ-τερ-ος, ὑμέ-τερ-ος.

Demonstrative Pronouns.

The stem *to-* appears in *ta-m* (older *tame*, Fest. 360), *tum*, for *ta-sme*, *tu-sme*; cf. Umbr. *pu-sme*: also in *topper* (**tod-per*), *is-tus*, *is-ta*, *is-tud*, *to-t*, *tan-tus*, *ta-lis*, etc.

The stem *i-* appears in *i-s*, *i-d*, old acc. *im*, *i-um*, *emem* (Paul. *Fest.* 76), *ipse* for *is-pte* (cf. *meo-pte*), *is-te*, *is-ta*, *is-tud*, *i-bi*, *i-ta*, *i-tem*, *i-terum*. The strong stem is *ei̯* in *e(i̯)a*, etc., Sk. *aya*; the dat. *eiei* may be formed on the analogy of *emem*: it also appears as *iei*, *eei*, *ēi*, *ĕi* (Neue, ii. 192).

The last syllable in *em-em* (Sk. *imam*) may represent an old enclitic *-em* or *-om*, appearing in Sk. *id-am*, Lat. *ĭd-em*, *quid-em*, *donic'-um*, *ecc'-um*, *ned-um*. Then as *ned-um* was divided *ne-dum*, and gave rise to *vix-dum*, *age-dum*, etc., so *id-em* was the origin of *ī-dem*, *is-dem* (*K. Z.* xxvii. 175). Cf. *-am* in *i-am*, *perper-am*.

Stem *ho-* appears in *ho-i-ce* (*hic*), *ho-rsum*, *ho-die*, *hī-bus* (on the model of *quibus*, *ibus*), *ha-c*, *ho-c*, *hu-c*, etc.

We have the stem *olo-* in *olo-es* (Paul. *Fest.* 19), *ul-tra*, *ul-s*, Old Lat. *ollus*, *olla*, *ōlim*. Later we get *illo*, with a nom. *ille*, on analogy of *iste*, *ipse*, etc.

We may add *alio-* (ἄλλος), with a simple root *al-* in *al-ter*, and also a root *es-* in *nec-erim* (=*eum*, Fest. 162), which is also found in Oscan and Umbrian.

Interrogative and Indefinite Pronouns.

Stem *qi-* in *qui-s*, *qui-d*, *qui-bus*, *qui-a* (instr., cf. Sk. *káyā*). Osc. *pis*, Gk. τίς, τί(τ). *Quis* is also fem. in Old Lat. (Neue, ii. 219, 222).

Stem *qe-* in *ques* (plur. nom., Neue, ii. 232); also seen in *cottidie*, *cujus* for **quettidie*, **queius* (*quoius*) with *-ue-* changing to *-uo-*; cf. Gk. *τέο*.

Stem *qo-* in *quo-m*, *qua-m* (for *qua-sme*, v. *tum*, supra), *quei* or *quī* (loc.), *quot*, *quotus* (Sk. *káti*, *katithá*), *qualis*.

It is difficult to separate *uter* from *πότερος*, Osc. *púterús*; but the loss of the guttural is very strange. Compare however, *ne-cubi*, *ali-cubi*, *ne-cunde*, *si-cubi*, beside *unde*, *ubi* (**πο-φι*).

Inflexion of Pronouns.

The principal terminations in pronominal inflexion seem to be as follows:—

		Masc.		Fem.	Neut.
Sing.	Nom.	*-i*		*-i*	*-d*.
	Gen.		*-ius*.		
	Dat.		*-ei*.		
	Loc.		*-i*.		
Plur.	Nom.	*-i*		*-i*.	
	Gen.		*-sum*.		

The characteristic endings, as distinct from the nominal declension, are—

Nom. sing. masc. and fem. in *-i* *ko-i-ce* (*hic*), *qu-i*, *qua-i* (*quae*).
Nom. neut. in *-d* *qui-d*, *quo-d*, **ko-d-ce* (*hōc*).

Gen. Sing. in *-ius*, which seems to be a combination of *i* of nom. with *-us* of gen. in *Cererus*.

In the case of polysyllabic stems this termination contracts with the last vowel of the stem to *-īus* (**illo-i-us* = *illīus*). But this long *i* is shortened in hiatus, almost always in *alterĭus*, *utrĭus*, is doubtful in *illī̆us*, *ipsī̆us*, *istī̆us*, *nullī̆us*, *totī̆us*, *unī̆us*, though always long in *alīus* (as here the nom. would otherwise be identical). *solĭus* perhaps occurs in Ter. *Haut*. I. I. 77 (Neue, ii. 214).

Nom. Plur. in *-i* (like *O*- and *A*-declension), *hi* (*ho-i*), *quae*, etc. Forms like *eeis*, *ieis*, *heis* are analogical.

Gen. Plur. in *-sum*, *horum*, *harum*, with a preceding long vowel, possibly on analogy of fem. (*hōrum*, not **hŏrum* from *hā-rum*). But *-um* for *-orum* is found in *eum* (Paul. *Fest.* 77), *quium* (Cato, in *Serv. ad Aen.* I. 95), *cuium.*

The dative plurals *hībus*, *ībus* seem to be analogical formations for *hīs*, on the analogy of *quibus.*

Cui is a loc. = *quoi*; cf. *hu-i-c* (**ho-i-ce*).

In the case of *quoius*, *quoiei* (*C. I. L.* I. 34), the ordinary terminations of gen. and dat. *-us*, *-ei* seem to be added to the nominative stem.

On the analogy of the *O-* and *A*-declension we find genitives *isti*, *ali*, *illi*, *toti*, *neutri*, *utrae*, *unae*, *ullae*, *totae* (Bücheler, p. 78), and datives *toto*, *illo*, *isto*, *ipso*, *alio*, *illae*, *solae*, *alterae* (ib. p. 114; Neue, ii. 253 sq.).

CHAPTER XIV.

THE COMPARISON OF ADJECTIVES.—THE NUMERALS.

The Comparison of Adjectives in Greek.

Of the primary suffixes *-ιον-*, *-ιστο-*, we have already seen (p. 310) that the suffix *-ιον-* is properly to be classed among the *s*-stems.

There was originally a variation of the root vowel between stems with the termination *-ιον-* and those with the termination *-ιστο-*, e.g. *κρέσσων* (Attic *κρείττων*) *κράτιστος*, *δλείζων* *δλίγιστος*. But in Sanskrit the accent remains on the root both in the comparative and superlative, and the root appears in both cases in the full degree, e.g. *urú-* (broad), *váriyas*, *váriṣṭha*. Nor in Greek do we find any trace of the shifting of the accent from the root syllable to the suffix, such as we should have expected to accompany a variation in the root vowel.

In the majority of cases the strong stem has disappeared from the comparative under the influence of the analogy of the positive and superlative, but we often find a quantitative in place of the original qualitative Ablaut.

E. g.	*ἐλαχύς*	*ἐλάσσων* for **ἐλεγχι̯ων*,	*ἐλάχιστος*.
	ταχύς	*θάσσων* (**θαγχι̯ων* for *θεγχι̯ων*)	*τάχιστος*.
	μάλα	*μᾶλλον* (for **μελιον*)	*μάλιστα*.

The strong root is seen in *μέλει*, *μέλομαι*, Lat. *melius*.

Abstract Substantives in *-εσ-* mostly have the same vocalisation in the root as the comparative and the superlative when of the full degree, e.g.—

μῆκος : *μήκιστος*, but *μακρός*.
κάρτος (for **κρετος* ?) : *κρέσσων*, but *κρατύς*.
θέρσος (Aeol.), *Ἁλιθέρσης*, *Θερσίτης*, but *θρασύς*.
νη-μερτής, but *ἁμαρτάνω*.
ἐν-δελεχής, but *δολιχός*.
βένθος : *βαθίων* (poet. for **βενθίων*), but *βαθύς*.

In Greek the *ι* of the comparative suffix is both long (*-ῑων*,

-ι̯ων) and short (-ῐων) (cf. p. 96); thus *αἰσχίων*, *ἐχθίων*, but *ἥσσων* (*ἡκ-ι̯ων*), and Old Attic *δλείζων* (*δλειγῐων*). Instances of *-ιων* are *κακ-ίων*, *κέρδ-ιον*, *ῥίγ-ιον*, *κάλλ-ιον*, *ἄλγ-ιον*, *φιλ-ίων*, *βέλτ-ιον*: of *-ι̯ων* *πάσσων* (*παχ-*), *βράσσων*, *χείρων*, *χερείων*, (cf. *χέρηι*), *ἀρε-ίων* (cf. *ἀρε-τή*), etc.

Secondary suffixes.

Secondary suffixes of comparison are *-τερο-*, Sk. *-tara-*, and *-τατο-*.

The suffixes *-το*, *-ατο* are found in the ordinals, e. g. *τρί-τος*, with a superlative meaning in *πύμ-ατος*, *ὕπ-ατος*, *ἔσχ-ατος*, and combined with the ordinal suffix in *τρί-τ-ατος*, *ἑβδόμ-ατος*. Of these the suffix *-ατο-* is explained by Ascoli (*Curt. Stud.* ix. 339 sqq.) as due to the analogy of the ordinals *τέτρα-τος*, *ἔνα-τος*, *δέκα-τος*, where the *α* (in the last two cases = *η̥*) is part of the stem. The superlative suffix *-τατο-* is a Greek formation and is a combination of the two suffixes *-το-* and *-ατο-* (Monro, *H. G.* § 121).

An accumulation of the suffixes of comparison is to be seen in *ἐν-έρ-τερ-ος*, *ὑπ-έρ-τερ-ος*, *χερ-ειό-τερ-ος* (cf. Lat. *inf-er-ior*).

In *ἕκαστος* the termination may be *-στο-*, as in *πό-στος*, just as *ἑκά-τερος* is parallel to *πό-τερος*: or else the word is to be divided *ἕκασ-τος*, like *ἑκασ-τέρω* (*η*. 321), which is related to *ἑκά-τερος* as *ἔκτοσ-θεν* to *ἔκτο-θεν*. The origin of *ἕκαστος* is then to be seen in *ἑκάς*, Lat. *secus*, for *σϝε-κας*, and hence *ἕκαστος* means 'each for himself.' The suffix *-κας* is to be found in *ἀνδρα-κάς* (*ν*. 14), *ἐγ-κάς*, an adverb used by Galen and Hippocrates (the plural is seen in Hom. *ἔγκατα*), and also in *ἀγ-κάς* (from *ἀνά*, *ἄν*) and *ἄγκαθεν* (Aesch. *Ag.* 3), which popular etymology connected with *ἀγκών*. In Aesch. *Cho.* 427 we find *ἀν-έκα-θεν*.

The suffixes *-τερο-*, *-τατο-* are added either to the stem, as in *ὠμό-τερος*, *ἀληθέσ-τατος*, or to case forms, as in *παλαί-τερος*, *μυχοί-τατος*, *σοφώ-τατος*. The difference between *-ωτερος*, *-ωτατος*, and *-οτερος*, *-οτατος*, though perhaps eventually depending merely on rhythmical considerations, is regarded by Brugmann (*M. U.* iii. 78) as original, those with a long vowel coming from the cases (abl. or instr.) in *-ω*, e. g. *προσω-τέρω*, *κατω-τάτω*. Other instances of the addition of the comparative suffixes to case forms are *μεσαί-τερος*, *ἡσυχαί-τερος*, *φιλαί-τερος*, *περαί-τερος*, the latter being parallel to Lat. *prae-ter*.

Other suffixes of comparison are to be seen in *ἔν-εροι* (cf. Lat. *inf-erus*, *sup-erus*), and *πρό-μος* (cf. *pri-mus*, *ulti-mus*).

Comparison of Adjectives in Latin.

Comparative.

The formation of the Latin comparative in *-ior* has been discussed above (p. 311). The form *minor*, *minus* does not properly belong here, as *minor* cannot stand for **minior*. Rather we must accept Stolz's suggestion (*Hdbuch.* p. 219) that there was an old substantive *minus*, **mineris*, which survives in *minis-ter*, *miner-rimus* (Paul. *Fest.* 122). The form *minimus* points to a comparative **minior*, the original genitive of which (**mini̯eris*) would become **mineris*, and so be identical with the gen. of *minus*, which therefore came to be regarded as the neuter of a comparative, and from this again was formed a masc. *minor*.

The suffix *-tero*, which is common in Greek, does not appear as a comparative suffix in Latin, but is seen in *ex-terus*, *posterus*, *al-ter*, *vester*, *noster* (cf. *ἡμέ-τερος*, etc.), and apparently in *magis-ter*, *minis-ter*[1].

In *inferior*, *superior* we have a double suffix; the true comparatives are *inferus*, *superus* (cf. Sk. *úpara*, etc.), of which the superlatives are (*infi-mus*), *summus* (**sup-mus*).

Superlative.

Suffix *-mo* in *sum-mus*, *mini-mus*, (*infimus*?), *ī-mus*, *pri-mus*, *puri-me* (=*purissime*, Paul. *Fest.* 252; Neue, ii. 106), *extremus* (formed from **ext(e)re*, adv. of *exterus*), *postre-mus*, *supre-mus*, *bru-ma* (*breu̯i-ma*), etc.

The formation of *pessimus* is doubtful.

Plurimus seems formed from the comparative stem. We find the various forms *ploerime*, *plusima* and *plisima* (Neue, ii. 115, from Varro and Festus).

Suffixes *-timo*, *-tumo* in *ex-timus*, *ci-timus*, *pos-tumus*[2], *ul-timus*

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[1] Henry (*Mém. Soc. Ling.* vi. 93) has remarked that the comparative suffix is appropriate where there are only *two* correlative terms (*noster*, *vester*, *ἡμέτερος*, *ὑμέτερος*), but inappropriate to a third term *σφέτερος*. This word has however nothing corresponding to it in Latin, and probably the stem *σφε-* was not originally pronominal in Greek (*K. Z.* xxviii. 140).

[2] There was apparently an old word *pos*, which has its correlatives in

(cf. *uls*). Compare also *op-timus*, *sollis-timus*, *sinis-timus*, *dex-timus*, the adjectives *fini-timus*, *legi-timus*, etc., and the ordinals like *vicēsimus* (*vikn̥t-timus*).

A suffix *-simus* also appears in *maximus*, *proximus*, *medioximus*, *facillimus* (for **facil-simus*), *veterrimus* (for *vetersimus*), etc. This suffix can hardly be derived, with Stolz, from the one instance of *plusimus* before the *s* became *r*, the suffix being taken as *-simus*, but is apparently a primitive Italian form, standing side by side with *-mus* and *-timus*. The ordinary explanation given—e.g. *M. U.* iii. 135, *Z. G. d. P.* 530—is that the termination is extended by analogy from the ordinals, where e.g. *vikn̥t-timus* = *vicensimus*, *vicesimus* (cf. p. 207). In any case the *-ss-* cannot come from *-st-* (cf. p. 207), and all direct comparison with Greek -ιστος is out of the question. But both in Greek and Latin the -ισ-, *-is-* of the superlative (κάκ-ισ-τος, *cert-is-simus*) represent the reduced form of the comparative suffix -ιοσ-, -ιεσ-.

The Numerals.

In the numerals we naturally expect to find the influence of association and analogy very powerful. It is true that, as the numerals are mostly indeclinable, the influence of a system of inflexion cannot be felt; but nevertheless the various numbers in a series stand in such close relationship to one another and to the corresponding numbers in parallel series, that each word almost necessarily affects the related forms. The subject has been treated by Baunack in *K. Z.* xxv. 225. A few of his instances are given here.

In Greek ὀκτάκις, ἑξάκις, πεντάκις, εἰκοσάκις are modelled on ἑπτάκις, ἐνάκις, where the *α* is radical, and hence come πολλάκις, ὁσσ-άκις, etc. ἕπτα-χα produces πέντ-αχα, ἑξ-αχῇ, and then ἀλλ-αχοῦ, ἑκαστ-αχοῦ, etc. In Latin, *octussis* (Hor. *Sat.* 2. 3. 156) for *octo-assis* produces *quadrussis*, *centussis*; *vigessis* produces *tri-gessis*; *duplex*, *du-plus* give *quadru-plex*,

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Sanskrit and Zend, and appears in *pos columnam*, etc., on inscriptions, also in *posmeridianas*, *pomerium*, etc. (Neue, ii. 736, 805.) This will be related to *po-* in *po-lio*, etc., as εἰς (ἐνς) to ἐν, ἀμφίς to ἀμφί, ἐξ to ἐκ, *abs* to *ab*, **subs* (*susque deque*, *sus-cipio*, etc.), to *sub*, **obs* (*os-tendo*) to *ob*. *Post*, old Latin *poste*, will be formed on the analogy of its opposite *ante*.

centu-plus, *decu-plus*, whence in late Latin *noncuplus*. In the distributives *se-ni* (for *ses-ni*, cf. *ses-centi*) is the origin of *se-* in *se-vir*, *se-digitus*, *se-mestris*, *se-decim*, *se-jugis*, and in its own series of *sept-eni*, *nov-eni*, and even perhaps of *dēni* (which can hardly be for *dĕc-ni*); so *viceni*, *nonageni*, *duceni* (*ducenteni* is later). So too *dec-unx* gave the model for *ses-cunx*; *quadriennium*, *quadri-duum* are due to *tri-duum*, and *bīga* (*bii̯ga*) gave rise to *quadrīga*. Festus, 177, quotes *ningulus*, which is evidently formed from *singuli*, as *nullus* from *ullus*[1].

Cardinal Numbers.

One. Stem *som-*, *sem-*, *sm̥-*, *sm-*.

Greek ὁμ-ός, ὅμ-οιος, ὅμ-αλος and εἷς, μία, ἕν for *σεμς, *σμ-ια, *σεμ. For the change from μ to ν cf. χθών : χθαμαλός, χιών : *hiems* (p. 305). The weak stem appears in ἅ-παξ, ἁ-πλοῦς, ἅμα (*sm̥m-a*), ἄ-λοχος, etc. Latin *sem-el*, *sim-ul* (*semol*, *sm̥l̥*), *sim-plex*, *sin-guli*.

Stem *oino-*, Greek οἴνη, Lat. *oino*(*m*), *oinvorsei* (Inscr.); *oi* then regularly passes to *oe* and *ū* in *ūnus*, but *noenum* (=*ne-oinom*) contracts to *non*.

The Homeric ἴα and ἰῷ are of doubtful origin, and are usually nearly synonymous with ἴσος, ὅμοιος or ὁ αὐτός, e.g. Δ. 437 ὁμὸς θρόος οὐδ' ἴα γῆρυς. I. 319 ἐν δὲ ἰῇ τίμῃ ἠμὲν κακὸς ἠδὲ καὶ ἐσθλός.

The Latin *perendie* cannot contain either *oino-* or *sem-*, and the old derivation '*per unum diem*' must be given up. Possibly *peren*=*per n̥*, cf. Greek παρά (*pr̥n̥-*).

Two. Indo-European masc. *du̯ō* (before consonants), *du̯ōu̯* (before vowels), fem. and neut. *du̯oi* (*K. Z.* xxviii. 234), Greek δύω, Attic δύο, Latin *duō*. In the Veda we have *duvā́*, in class. Sanskrit *dvá* (cf. δώδεκα=δϝω-δεκα).

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[1] In the Romance languages the principle of analogy in the numerals is carried still further. Cf. Ital. *ottuagesimo* (*octuaginta*, Columella, Vitruv., Plin.) from *septuagesimus*, *quinterno*, *sesterno* from *terno*; Old French *octembre* from *septembre*, etc. So French *dizaine*, *douzaine*, *quinzaine* point to a fem. sing. **decena* (cf. *terdeno bove* Sil. Ital. 15. 259) and *huitaine* to **octena*. So in the Heraclean tables we find ὀκτώ, ἐννέα, where the aspirate is due to ἕξ, ἑπτά. Similar instances of the reciprocal attraction of pairs of words are seen in late Latin *meridionalis* (due to *septentrionalis*) *senexter* (cf. *dexter*), Ital. *greve*, pointing to **grevis* for *gravis*, like *levis*.

Homer uses δύω and δύο, Attic and the *κοινή* only δύο, but the relation between the two is unexplained. In Homer the word is indeclinable, and can be so also in Attic. When declined the Attic genitive and dative is δυοῖν, but in later Attic and the *κοινή* also δυεῖν (cf. οἶκοι : οἶκει, p. 318). Herodotus has the plural forms δυῶν, δυοῖσι, and dialectically we find δύε, δυσί, δύας.

Three. Indo-European *trei̯- tri-* Sanskrit *tráyas*, Homeric and Attic τρεῖς, Aeolic τρῆς (from τρει̯ες), Latin *trēs* (*trei̯es*), *tri-a*. The form τρεῖς was also used for the accusative in place of the more regular *τριυς, (*τρῖς). The neuter τρία (Sanskrit *tríṇi*) appears with the last vowel long in τριάκοντα (cf. διᾱκόσιοι) see p. 372.

Four. Indo-European *qetu̯ōres*, *qtur-* Sanskrit *catvā́ras*, Greek τέττορες and τέτορες (Doric), early Attic τέσσαρες, Ionic τέσσερες, Homeric τέσσαρες and πίσυρες. The stem τετρα- appears in Homeric τέτρα-τος, Attic τέταρ-τος. The weakest form of the stem is seen in Sanskrit *tur-ī́yas* (for **ktur-ī́yas*), which, as the *k* is velar, must appear in Greek as πτρυ- or πτυρ- in τρυ-φάλεια for πτρυ-φαλεια, cf. τρά-πεζα for πτϝr̥-πεζα.

In Latin the *a* of *quatuor* is a difficulty, as we should expect **quetuor*, but it may come from *quartus* (*qtu̯r̥tós*, cf. Sanskrit (*k*)*turī́ya*). *quadr-* seems to correspond to the Greek τετρα-, Sanskrit *catur-*, Indo-European *qtu̯r-*, with the first syllable restored in Greek on the analogy of the strong form. But the *d* in Latin is unexplained.

Five. Indo-European *penqe*, Sanskrit *páñca*, Greek πέντε, Latin *quinque* (for **penque*, p. 221); πέμπτος, *quin*(*c*)*tus* (cf. *Quinctius*) are regular. The Lesbian πέμπε is for πέντε on the analogy of πέμπτος, cf. πεμπάς (-*n̥s*), πεμπάζω (δ. 412). πεντήκοντα, but πεντᾰκόσιοι.

Six. Indo-European *su̯eks*, Sanskrit *ṣáṣ*, Doric Ϝέξ, Attic ἕξ, Latin *sex*. The Cymr. *chwech* and Doric Ϝέξ point to an original initial *su̯*.

Seven. Indo-European *septm̥*, Sanskrit *saptá*, Greek ἑπτά, Latin *septem*. The Hindu grammarians give the base as *saptan-*, as in *navan*, *daçan-*, but we have already seen (p. 110) that the base should rather end in the labial nasal.

Eight. Indo-European *oktō(u̯)*, Sanskrit *aṣṭá*, *aṣṭāú*, Greek ὀκτώ, Latin *octo*. These forms are dual (cf. δύ-ω, *amb-o*, λόγ-ω).

Nine. Indo-European *neu̯m̥*, Sanskrit *náva*, Greek ἐννέα, with ordinal ἔνατος, and in Homer also ἔννατος, ἐννήκοντα (τ. 174), but also ἐνενήκοντα, as in Attic. The Sanskrit *náva*, Latin *novem*, point rather to a Greek *ἐνϝα, which we find in the ἐνϝ-, ἐνν- of ἐννάκις, ἐννήκοντα (cf. ξενϝος, Ionic ξεῖνος, Att. ξένος, p. 184). ἐννέα, with the νν of ἐνϝ-, seems to stand for ἐνεϝm̥, becoming ἐννεϝm̥, ἐννέα.

Ten. Indo-European *dek̂m̥*, Sanskrit *dáça*, Greek δέκα, Latin *decem*; Latin *undecim* for *úno-decem*, *únidecem*; cf. *un-de-viginti*; so with the other numerals to 'twenty.'

Twenty. Sanskrit *vinçatí*, Greek εἴκοσι (Attic and Ionic), ϝῑκατι (Doric). ϝῑκατι = ϝῑκm̥τί cf. Boeot. ordinal ϝικαστῆ, Latin *vicēsimus* (*vikn̥t-timus*). The ο of εἴκοσι seems to come from εἰκοστός, which in its turn is on the analogy of τριᾱκοστός for *τριακονστος (cf. ἑκατόν : διακόσιοι). The εἰ- of Greek, *vi-* of Latin, are unexplained.

The Latin *viginti* is for *vi-kn̥t-i*, *k* becoming *g* before *n* (p. 216). In form it may be a dual, answering to the plural termination of *triginta*. In any case it has formed the model of the following multiples of ten; cf. *triginta*, but τριᾱ́κοντα.

Higher Latin Numerals.

Octoginta. The older form may be *octuaginta* (Vitruv., Colum., Plin.) for **octovaginta*, which corresponds to ὀγδοήκοντα, in which case *octoginta* will be a later form and *septuaginta* a formation by analogy.

Nonaginta (=**novenaginta*, *neu̯enaginta*) cf. ἐν(ν)ενήκοντα. All these forms are probably originally neuter plurals, and keep the original long *a* of that form (p. 219), owing perhaps to the fact that such phrases as *triginta viri* soon caused their gender to be forgotten.

Hundred. Indo-European *k̂n̥tó-m*, Sanskrit *çatám*, Greek ἑ-κατόν, Latin *centum*. The ἑ- in Greek is unexplained. As *k* becomes *g* between two sonants in Latin, *septingenti* is for *septm̥k̂n̥ti*, and this gives rise to the forms *quingenti*, *quadringenti*, and even *octingenti*, *noningenti* (Columella). Beside the Greek διακόσιοι, etc., the Sk. termination is *-çatya*, best represented by Doric -κάτιοι, Arcad. -κάσιοι. The ο of the Attic -κόσιοι is due to the analogy of -κοντα.

Thousand.

Gk. χίλιοι, cf. Homeric ἐννεά-χῑλοι, δεκά-χῑλοι. The original stem was χεσλο- (Doric χήλιοι), Sanskrit *sa-hásra*, Indo-European *ghesro-*.

Mille, *milia* is obscure: perhaps it may be the same as μύριοι, with *u* becoming *i* before *li* (cf. p. 71, and compare ὕλη : *silva*).

Ordinals, Distributives, etc. In Greek.

Greek πρῶτος, Doric πρᾶτος, is either for *προ-ατος, a superlative of πρότερος, or a superlative of πρωϝ-ος (r̥̄), answering to Sanskrit *pūrvas*, as τρίτατος is a superlative of τρίτος. πρῴην will then be for *πρωϝιᾱν (πr̥̄ϝι̯ᾱν), Doric πρᾱν.

δεύτερος, if for δϝετερος, we should expect to be *δετερος (cf. δϝώδεκα). In Homer we have δεύτατος in the sense not of 'second' but 'last' of a number, e.g. δεύτατος ἦλθεν ἄναξ ἀνδρῶν Ἀγαμέμνων (T. 51), cf. οἵ κεν ἐμεῖο δεύτεροι ἐν νήεσσι— λίπησθε (Ψ. 248), where δεύτεροι means 'after me.' The old grammarians derived the word, probably rightly, from the root of δεύομαι, the notion of separation passing into that of sequence (*K. Z.* xxv. 298). Similarly *secundus* is from the root *seq* in *sequor*.

In compounds δυ- appears as δι- (δϝι-), Sanskrit *dvi-*, as in διᾱκόσιοι (formed like τριᾱκόσιοι), cf. δίς.

ἕκτος compared with *sextus*, Anglo-Saxon *sixta*, points to an original σϝεκστος.

In ἕβδομος, ὀγδόϝος we have an unexplained change from the tenues to the mediae. ὀγδόϝος compared with *octāvus* stands for ὀγδωϝος with the long vowel shortened in the hiatus (p. 183). The stem is *oktōu̯-* before the following vowel (p. 368).

δέκατος is formed like τρίτος, as compared with Sanskrit *daçamá*, Latin *decimus*.

In Latin.

Latin *singuli=sm̥-kl̥ó-*, *k* becoming *g* between sonants (p. 219).

bini=*du̯oi̯noi̯* (Old High German *zwein-zug*, Old Saxon *zwene*, English *twain*), so *bis* = *du̯is*, cf. *bimus* beside *dimus* (p. 211).

All other distributives are formed with the termination -*no*, but with assimilation to one another, e. g. *trini* (also *terni*), *quini* on the analogy of *bini*; *septēni*, and generally the succeeding forms in -*ēni* on the analogy of *seni*. *Undeceni* '99 at a time' (Plin. 36. 8. 14) is noticeable.

primus=**prismus* (p. 213), cf. *pris-cus*, *pris-tinus*, *πρί-ν*. In form it is a superlative ; cf. *πρόμος*.

tertius=*tritíi̯os*, Sanskrit *tṛtī́ya*, with *ri* becoming *er* in an unaccented syllable (p. 192).

quartus for *qtu̯r̥tós*, cf. p. 369.

septim-us, *decim-us* have a termination -*os*, not -*mus* (p. 110, De Sauss. p. 30).

octāvus is similarly formed from *oktōu̯-*, with Indo-European *ōu̯* becoming Latin *āu̯* (p. 187).

nōnus (for *nou̯m-us*) may owe its second *n* to assimilation to the first.

All other ordinals are formed with the suffix -*timus* (Sanskrit -*tama*), -*ensimus* (=*ent-timus*, p. 207). Thus *vigēsimus*, *vicēsimus*=*vikn̥t-timus*, and the termination -*e*(*n*)*simus* is then extended, e. g. to *ducentesimus*. Priscian mentions a form *ducesimus*, which would be more regular.

In the multiplicatives, *simul* (older *semol*)=*sm̥l̥*; the fuller form appears in *semel*, *bis*=*du̯is* (*duis* is quoted Paul. *Fest*. 66), cf. Sanskrit *dvis*, Greek δϝίς. *ter* is the unaccented form of **tris*, Greek *τρίς* (cf. p. 192), perhaps originating in phrases like *bís et ter* with only one accent. *quater* for **quatur*, *qᵗr̥*, Sanskrit *catur*, is on the analogy of *ter*. The rest are formed with a termination -*iens* (=*in̥s*), Greek -*ιας* in *τριάς*, cf. *triens* (*K. Z.* xxv. 137). *vic-iens*, *tric-iens* are on the analogy of *deciens*.

Forms like *bi-fariam* may be compared with the Greek *δι-φάσιος*. *du-bius* perhaps=*du̯i-bhu̯ios* from the root *bhŭ* in *φύω*.

CHAPTER XV.

The Verb.

The Verb. THE Verb proper is distinguished from other parts of speech by the union in one and the same word of subject and predicate, which are severally expressed in the ending and the stem of the verbal form. As the endings can all be expressed by Personal Pronouns, they are called Person endings, and are either primary, secondary, or those belonging to the Imperative Mood.

Finite and Infinite. For the sake of practical convenience two main divisions of the verb are made, into forms Finite and forms Infinite. The Verb Finite alone can express a complete sentence, and its forms contain elements signifying differences of person, number, time, and modality. The Verb Infinite in the Infinitives, Participles, and Verbal nouns belongs properly to the nominal class. The Infinitive in Greek for instance was, as we shall see, originally the dative of an abstract noun. Subsequently there grew up such idioms as the use of the Infinitive with cases, and the introduction of different tenses into the Infinitive mood, which bring it nearer in character to the Verb Finite.

Inflexional forms. In Inflexional languages like Greek and Latin there is a great variety of grammatical forms. The Greek approximates most closely to the Sanskrit, and from a comparison of these two languages we can obtain an idea of the structure of the Indo-European Verb. Greek and Latin mark by changes of form the character of the affirmation, and the mental attitude of the speaker. This is what we understand by difference of Moods (ἐγκλίσεις). Differences of time are marked by differences of Tense (χρόνοι), which again are expressed by change of form. So too with differences of Person (πρόσωπον) in the subject of the proposition; of number (ἀριθμός); of the state of the subject (διάθεσις), which we call Voice. All the foregoing differences of form are embraced under the general term of conjugation (συζυγία).

The Greek Verb in its different Moods and Tenses shows a greater variety of Stem formation than the Noun.

The first distinction to be noted is that between Thematic and Non-thematic Stems.

Thematic Stems.

Thematic Stems are those in which the termination is preceded by the vowels ε and ο, of which ο appears before nasals and ε before other letters, e.g. λύ-ο-μεν, λύ-ε-τε, λύ-ο-ντι (=λύουσι).

In the Subjunctive Mood this thematic vowel is lengthened and we have λύ-ω-μεν, λύ-η-τε, λύ-ω-σι.

Non-thematic Stems.

Non-thematic stems do not show this variable ε and ο, but the ending is added directly to the stem, which ends either in a consonant as in ἐσ-μέν, ἴδ-μεν, or in α as in the Perfect and Sigmatic Aorist, e.g. λελύκα-μεν, ἐλύσα-μεν.

In the third singular of these tenses, however, we must notice that the α is changed to ε, λέλυκε-ν. The α of such tense-stems must be distinguished from the α of the verbal root in such a verb as ἵστα-μαι, √στα.

In the Perfect the α was not originally carried through all numbers and persons. Thus πέποιθα-ς but Epic ἐπέπιθ-μεν, ἔοικα-ς but Epic ἐΐκ-την.

This α is to be distinguished from the thematic ε and ο, and we may find an analogous distinction in nominal Inflexion. As in the consonantal declension we have acc. πόδ-α, but in the *O*-declension acc. λόγο-ν, so in the verb we find ἔθηκα but also ἔλυο-ν, ἔθηκα-ς but also ἔλυε-ς.

Thematic Vowel.

The name Thematic Vowel implies that the addition of this vowel makes the verbal stem into a new theme, and that it is not to be regarded as a mere euphonic addition serving as a connecting link between stem and ending. We may draw a comparison between the stem λεγο- of λέγ-ο-μεν and the stem λογο- of λόγ-ο-ς. What has been said of the verb applies also to the noun.

Nature of Person-Endings.

The origin of the personal endings cannot be demonstrated with certainty. We have already distinguished between roots Predicative and roots Pronominal. It is in the Pronominal roots that we must seek the origin of the Personal endings. But it is not possible in all alike to trace with precision the history of their development from the original form.

It is not difficult to discern in the *-mi* of *δίδω-μι* a resemblance to the stem of the first personal pronoun, or to see a demonstrative stem in the ending of *δίδω-τι* (=*δίδωσι*), but it is more difficult to identify the suffix *-si* of the 2nd pers. sing. with *tva* (=thou).

The theory of pronominal affixion, when pressed furthest, assumes that the stems *ma* and *tva* were used to form person-endings in the sing. and compounded with one another to form the person-endings of the dual and plural.

Thus we are called upon to suppose that the ending *-τε* of the 2nd plural, must have sprung from an original *tva-tva*, for which some foundation may conceivably be found in the fuller Latin ending *-tis*. But when we are asked to go further and say that the ending *-μεθα* is compounded of *ma-tva-tva*, and *-σθε* of *tva-tva-tva*, we no longer seem to tread on solid ground.

Supposing that we do assume a pronominal origin for the person endings, there is no need to refer any of them back to such reduplications as we have quoted. There may have been different pronominal stems, just as we find a difference between the stems of singular and plural in the personal pronouns. At the time of the separation of the different races the person endings must already have had a long past history, and no one can say with confidence how or of what elements these terminations were composed (cf. p. 23, and Max Müller, *Science of Thought*, p. 233).

Greek Person-endings. First sing. act. Primary ending.

The primary ending of the first sing. act. has two different forms. Thematic verbs have -ω, e.g. φέρω, non-thematic have -μι, e.g. ἵστημι. The Sanskrit ending is *-mi* in both.

On the ground of such forms as ἐθέλωμι (A. 549) Curtius assumes that *-μι* was the original ending in all Greek verbs. Thus ἵστη-ιμ, φέρο-μι, ἐθέλω-μι (subj.). In Sappho and Pindar we find such forms as κάλημι, αἴτημι, etc., and in Homer besides ἐθέλωμι are to be found εἴπωμι, ἴδωμι, τύχωμι. So too in the Optative which in the other persons shows secondary endings, the 1st pers. sing. ends in *-μι*, e.g. φέροιμι.

Another explanation has been suggested (*M. U.* i. 146, ii. 121), namely, that the long *-ω* is the result of contraction, between the short thematic *ο* of φερο-, and a vowel termination (cf. p. 441).

Secondary ending.

The secondary ending of the 1st sing. is *-ν*, Indo-European *-m*, and *-a* :—

ἔφερον Sanskrit *ábhara-m.*
εἴην Latin *siem* Sanskrit *syām.*

After consonants the *m* becomes sonant and appears as *-a*, as in ἠσ-m̥, ἦα. So also with ἔχεϝα, ἔδειξα, etc.

This *a* has been extended by analogy beyond its proper limits. Thus it takes the place of *-ον* in the forms εἶπα, ἤνεγκα, and also appears after a vowel in a non-thematic verb, as in ὑπερετίθεα (Hdt.! 3. 155).

The ending of the 1st pers. sing. of the perf. is *-a*. We do not find any trace of a final nasal in this termination in Greek or Sanskrit, and in all probability *a* was the original ending.

Curtius on the evidence of Aeolic οἴδημι (=οἶδα) assumed that *-μι* was the original ending of the pérfect, but this form is rather due to a false analogy, as is the case with ἴσαμι, which is quoted in Hesychius, formed on the model of ἴσασι.

Second sing. act.

The Primary ending is *-σι*, Sanskrit *bhára-ṣi.* In Greek this ending only appears in the Substantive verb, viz. Homeric ἐσ-σί.

The form εἶ, which is post-Homeric, arose from ἐσι, cf. Sanskrit *ási.* From this εἶ by the addition of *s* after the model of φῄς, etc., came εἴς (also accented εἶς), which is an Ionic form.

The ordinary ending of this person in Thematic Verbs is

-εις, e. g. φέρεις. This form cannot arise simply from φερε-σι, for if the intervocalic σ, according to the Greek rule, fell out we should have φέρει. Perhaps this ς, which appears in all dialects, was an extension of φέρει (=φερεσι) borrowed from the secondary ending ἔφερε-ς.

The same explanation will also apply to the subj. φέρῃς.

In the non-thematic conjugation, -σι has been replaced by the secondary ending -ς, e.g. δίδως, ἵστης, which we may compare with the -ς of ἐτίθει-ς, ἔφερε-ς.

Many forms have been introduced into this conjugation upon the analogy of the contracted verbs, cf. p. 399.

The ending of the 2nd sing. of the perfect was -θα.

-θα answers to the Sanskrit termination *-tha*; οἶσ-θα (=οἰδ-θα), Sk. *vét-tha*. Not only οἶσ-θα but all second persons sing. of the perf. of stems ending in τ, δ, θ, or σ have the termination -σ-θα, but the σ belongs to the stem and not to the termination.

The form ᾖσθα of the imperf. of εἰμί points back to an old perfect ᾖα, ᾖσθα, ᾖεν inflected like οἶδα, which afterwards coalesced[1] with the imperfect of the same verb (cf. *K. Z.* xxvii. 315).

On the model of ᾖσθα we also have the Attic forms ἔφησθα, ᾔδησθα (cf. Rutherford, *New Phryn.* p. 225).

In Homer the same ending appears in ἐθέλῃσθα, etc., and the optatives βάλοισθα, κλαίοισθα, where the ς forms no part of the verbal stem, but belongs to the termination. The form of the termination -σθα in place of -θα is due to the analogy of οἶσθα, ᾖσθα, where σ is a part of the stem.

Third sing. act.

The primary ending of the 3rd sing. is -τι.

ἔσ-τι, Sanskrit *ás-ti*,
Doric δίδω-τι, Attic δίδω-σι Sanskrit *dádā-ti*.

This is the ending in Greek of the third sing. of the -μι conjugation generally. It also appears in the Epic ἐθέλῃσι, ἄγῃσι, λάθῃσι, etc. But here as in ἐθέλῃσθα we need not suppose the ending to be original. The iota subscript points rather to an extension of the proper ending by an external addition. The ending is almost entirely confined to the Homeric poems and exists side by side with the normal -ῃ.

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[1] Schmidt and Brugmann suppose that as the forms ᾖα, ᾖστον, ᾖμεν were common both to the perfect and imperfect of εἰμί, the two tenses came to be regarded as one, and the form ᾖσθα of the perfect replaced the proper imperfect form ᾖς.

In the thematic conjugation we have the ending -ει, e.g. φέρει, Sanskrit *bhára-ti*. The corresponding form to the Sanskrit would in Greek be φερετι, and this according to rule would pass to φερεσι. Like the second pers. the third has probably been influenced by the secondary ending:—

e.g. φέρεις φέρει follow φέροις φέροι, ἔφερες ἔφερε.

The Secondary ending was originally τ:—

ἔφερε(τ), Sanskrit *ábharat*.
φέροι(τ), Sanskrit *bhárēt*.

The *t* remains in Latin (e.g. *erat*), but according to rule has disappeared in Greek. Latin has *-t* in the perfect *cecidit* where Greek has -ε, as in οἶδε, Sanskrit *véda*.

The ending of the third sing. of the sigmatic aorist is -ε, just as in the third sing. of the perfect. Thus ἐδεικ-σε (ἔδειξε), is like the perfect οἶδ-ε, and has not the same vowel as ἐδεικ-σας (ἔδειξας).

First plural act. The Doric termination is -μες, as found in inscriptions and in the imitations of Doric in Aristophanes. In the other dialects we find -μεν for both primary and secondary tenses, but where this form appears in Doric it is probably due to the influence of other dialects.

In Sanskrit we have old primary ending *-masi*, later *-mas*, while the secondary ending is *-ma*.

The Sanskrit *-mas* and the Latin *-mus* appear to point to a primary ending in *-s*, so that we may assume the Doric -μες to stand for the original primary ending, while the -μεν of the other dialects may represent the secondary ending.

But in both Greek and Latin alike there is but one ending for all tenses.

Second plural act. The person ending of the 2nd plural is always -τε.

The Sanskrit *bhára-tha* leads us rather to expect a primary ending -*θε*, while -*τε* corresponds to the Sanskrit secondary ending *ábhara-ta*.

Third plural act.

Of this person there are three primary forms :—

(1) -*ντι* for original Indo-European -*nti* which appears in the Doric *φέροντι* (=Attic *φέρουσι*), Sanskrit *bhára-nti*.

(2) -*αντι*, -*ᾱσι*, Indo-European -*n̥ti* as in *ἔᾱσι*, *δεδίᾱσι*, *ἴᾱσι* answering to the Sanskrit *s-ánti*, *y-ánti*. There are many such forms in Homer, e.g. *βεβά-ᾱσι*, *γεγά-ᾱσι*, *μεμά-ᾱσι*.

Monro, *H. G.* p. 6, regards the Hiatus of these forms as proving that the ending was originally -*σασι* answering to the secondary -*σαν*.

Thus *ἴσασι* is for *ἰδ-σασι*, and *εἴξασι* the Attic 3rd pl. of *ἔοικα*, is for *εικ-σασι*.

Attic also shows *τιθέ-ᾱσι*, *διδό-ᾱσι*, whereas in Homer we have *τιθεῖσι* (=*τιθε-ντι*), *διδοῦσι* (=*διδο-ντι*); which, in spite of the accent, cannot for phonetic reasons be regarded as contractions of *τιθέ-ᾱσι* and *διδό-ᾱσι*.

(3) -*ᾰτι*, -*ᾰσι*, Indo-European -*n̥ti* unaccented. There are the Doric perfect *ἐθώκᾰτι* (Hesych.) and the Homeric *λελόγχᾰσι*, *πεφύκᾰσι* in which we have the short -*ᾰσι* with the long stem. Herodian speaks of many other instances in Ionic and quotes *μεμαθήκᾰσι* and *πεφήνᾰσι* from Xenophanes (Curt. *Verb.* ii. 166). However in *πεποίθᾱσι*, *ἑστήκᾱσι*, where the stem is full, we have the ending -*ᾱσι*.

Osthoff, *M. U.* i. 100, explains -*ᾰτι* as an alteration in Greek for -*αντι*, upon the model of the ending -*ᾰται* of the 3rd pl. perf. midd. Thus on the model of *τετεύχᾰται* (N. 22) and similar forms, *πεφυκαντι* passed into *πεφύκᾰσι*.

Secondary endings. (1) -*ν*(*τ*), I.-E. -*nt*.
ἔφερον, Lat. *ferebant*, *erant*, but Sk. *āsan*.
(2) -*αν*, I.-E. -*n̥t*, *ἔλυσαν*.

The original *ἔλυσn̥τ* should pass to *ἔλυσα*(*τ*), the final consonant of which would, according to Greek rule, drop out. *ἔλυσα*, however, would be indistinguishable from the 1st pers. sing., so on the analogy of *ἔφερον* we have *ἔλυσαν*. Otherwise we must assume that the accent originally rested on the final *-ń̥t*, which would according to rule pass in Greek into *-αν(τ)*. We have the ending *-ν* after the final vowel of stems of non-thematic verbs, as in the Homeric *ἔσταν, ἔβαν, ἔφαν*, etc.

In the optative we have the ending *-εν* in *φέροι-εν, εἶ-εν*, but Elean *ἀποτίνοιαν, συν-έαν* point to a primitive *φεροι-αν, εἱ-αν*, representing an original ending *-n̥t*. *-αν* appears in the 3rd pl. opt. of the so-called Aeolic aorist, e. g. *τίσει-αν*. This ending is represented by *ν* alone in Bekker's reading *ἄλφοιν*, *υ*. 382 (Monro, *H. G.* § 83).

The exact explanation of the *-εν* of *εἶεν* is uncertain. The quality of the vowel may have been assimilated to the *η* of *εἴ-ην, εἴ-ης*, etc., or perhaps modelled upon the aor. pass. so-called, e. g. *ἐφάν-ην*, 3rd pl. *ἔφαν-εν*.

The ending *-σαν* appears in *ἔθεσαν, ἔγνωσαν, εἴησαν*, and in inscriptions of the second century B.C. we find such forms as *ἐλάβοσαν, εἴπασαν*. It was probably extended from the sigmatic aorist. We find it extended to the strong aorist in such cases as *ἔβησαν*—side by side with *ὑπέρβᾰσαν*—to the pluperfect, the aor. pass., and lastly to the optat., as in the form *σταίησαν* (P. 733).

Dual endings. For the 1st pers. dual Greek has no separate form.

For the second and third we have primary *-τον, -τον*, secondary *-τον, -τᾱν* (*-την*).

The primary endings of the Sanskrit *-thas, -tas* have no resemblance to the Greek, but the secondary *ἐφέρε-τον, ἐφερέ-την* answer to *ábhara-tam, ábhara-tām*. Cf. Monro, *H. G.* § 5 note.

In Homer there are three instances of the 3rd dual imperf. in *-τον*, where the metre does not admit of *-την*. K. 363 *διώκετον*, N. 345 *ἐτεύχε-τον*, Σ. 583 *λαφύσσετον*, while, on the other hand, there are three cases where the termination *-την* is used for the 2nd pers. *καμέ-την, λαβέ-την, ἠθελέ-την*, which is a very common usage in later Greek.

Person-endings of Middle voice. Middle endings are to be found in Sanskrit, Greek, and Gothic, with some traces in Latin (cf. p. 468).

It is not possible to say what is their etymological relation to the endings of the active. Few of the active endings show clear traces of their origin; the endings of the middle voice are even more obscure.

First sing.

1st sing. termination, primary -μαι, secondary -μᾱν (-μην). In the case of the primary ending of the Middle, just as of the Active Voice, there may have been an original difference between the thematic and non-thematic conjugations.

In Greek the ending -μαι represents the original middle ending of non-thematic verbs, but has also become the ending of the thematic verbs.

The Sanskrit *bháre*, on the other hand, shows the original middle ending of the thematic verbs, but this ending has also become the ending of the non-thematic verbs, viz. *bíbhre*, from the same √*bhṛ*.

Second sing. midd.

Primary termination -σαι—φέρε-σαι, φέρε-αι, φέρῃ, Sanskrit *bhárasē*; -σαι remains in ἧσαι, γεγράψαι (-π-σαι), etc.

In the case of βούλει, οἴει, etc., where -ει cannot come from -εαι, the form may be active, and have been transferred to the middle (-ει = -εσι).

In the verbs in -μι, σ remains between two vowels, contrary to the ordinary phonetic rule of the Greek language. So also in the perfect. In Homer we have δύνα-σαι, ὑποδάμνα-σαι, παρίστα-σαι, μέμνησαι, but also μέμνηαι.

Secondary termination -σο—ἐφέρε-σο, ἐφέρεο, ἐφέρου. -σο remains in ἧσο, ἐγέγραψο (-π-σο), etc.

After a vowel the σ of -σαι and -σο ought phonetically to disappear. It does so disappear in the thematic conjugation and in the sigmatic aorist middle, e.g. ἐλυσαο, ἐλύσω. But Greek usage is not consistent in its treatment of this intervocalic σ. Thus in Homer we find δίζηαι, παρίσταο, μάρναο, and in the perfect μέμνηαι, βέβληαι, pluperfect ἔσσυο, side by side with the forms δύνασαι, μέμνησαι, etc. So in Aristoph. *Acharn.* 870 occurs the Boeotian πρίασο, but in *Ran.* 1227 ἀποπρίω, *Vesp.* 1440 ἐπρίω.

The retention of the σ of -σαι, -σο, after a vowel, is due to a restoration based on the analogy of the consonantal stems, such as *γέγραψαι*. Accordingly *-σαι* appears in the perfect and pres. of the *-μι* conjugation, and *-σο* in the impf. and plupf. The later tendency to make *-σαι* the uniform ending is shown in the sentence of the grammarian Moeris—*ἀκροᾷ Ἀττικοί, ἀκροᾶσαι Ἕλληνες* (cf. Osthoff, *M. U.* ii. 38).

Third sing. midd.

Primary termination *-ται*, Sanskrit *-te* :—

φέρε-ται, Sanskrit *bhára-te.*

Secondary termination *-το*, Sanskrit *-ta* :—

ἐφέρετο, Sanskrit *ábharata.*

First plur. midd.

Termination *-μεθα*, for which Sanskrit shows *-mahē.* There is also in Greek the form *-μεσθα*, which appears in Epic *ἱκόμεσθα, γενόμεσθα*, and in the Iambic and Trochaic metres of the Tragedians and Aristophanes. The *σ* of *-μεσθα* may be due to the analogy of the endings *-σθον* and *-σθε*.

Second plur. midd.

Termination *-θε*, e.g. *ἦσ-θε, πέφαν-θε, πέπυσ-θε*. *-θε* seems to be for *θϝε*, with which we may compare Sanskrit *-dhve* for primary, *-dhvam* for secondary ending. There is a difference between the final vowel in Greek and Sanskrit, of which there is no certain explanation.

The *σ* of *-σθε*, as in *φέρε-σ-θε*, is not original. Originally appearing only in stems ending in *σ* or a dental, it has passed by analogy into all other stems for the sake of uniformity. Thus in *ἦσ-θε, λέλησ-θε* the *σ* is regular, but not so in *λέγε-σ-θε, φέρε-σ-θε*.

Third plur. midd.

The Primary endings of the third plur. mid. are *-νται, -αται* (*-ν̥ται*) :—

φέρονται, Sanskrit *bhárante.*

εἵαται, Sanskrit *ásatẹ̄.*

In Homer we have *κέαται*, side by side with *κείαται*, and in Attic *τετάχαται, ἐφθάραται, τετράφαται*, from the perfect stems ending in a consonant. For others outside Attic cf. p. 112.

The endings *-αται* and the secondary *-ατο* have been also added to vowel stems, as for instance in Homer to stems in *ι* and *υ* and long vowels; e. g. *κεκλί-αται*, *κεί-αται* (*κέαται*), *εἰρύ̆αται*, *βεβλήαται*. In Herodotus we have *ἡγέαται*, *κεκλέαται*, with shortening of *η* before *-αται*, and also in the present *τιθέ-αται*, *ἐκδιδό-αται*, *δυνέ-αται*.

The rule is that *-αται*, *-ατο* should appear after consonants and *ι* and *υ*, but *-νται*, *-ντο* after vowels.

Side by side with these forms we may set the Attic *τιθέ-ᾱσι*, *διδό-ᾱσι* of the active.

The Doric *κιαται*, *γεγραψαται* from the Heraclean tables show that *-αται* was not confined to Ionic and Attic. *γεγραψαται* shows an ending *-σαται*, which may be compared with the active ending *-σασι* of *ἴσασι* and *εἴξασι* (cf. p. 379).

Secondary ending, *-ντο*, *-α̨το* (*-ν̥το*).

Thus *ἐφέροντο*, Sanskrit *ábharanta*.

εἴατο (*ἥατο*), Sanskrit *ásata*.

Other instances are to be found in *κέατο*, *εἰρύατο*, *ἐτετάχατο*. Apart from the Indicative, *-ατο* appears as an ending of the Optative Mood, e. g. *γενοίατο*, *ἀπολοίατο*. This ending is regular in Homer. The only exception is the reading *μαχέοιντο* (A. 344), which can be altered to *μαχεοίατ' Ἀχαιοί*.

Before *-αται*, *-ατο* gutturals and labials were aspirated, e. g. *ἐτετάχ-ατο*, *τεθάφ-αται*, but not dentals, as in *κεχωρίδαται*, *ἀγωνίδαται*.

First pers. dual midd.

The Termination *-μεθον* of the first pers. dual, is only sparingly used; Ψ. 485 *περιδώμεθον*, Soph. *El.* 950; *Phil.* 1079.

The form bears no resemblance to the Sanskrit *-vahē*, *-vahi*, but approximates to the 1st pers. plural *-μεθα*.

2nd and 3rd Dual.

Primary terminations *-σθον*, *-σθον*. Secondary terminations *-σθον*, *-σθᾱν* (*-σθην*).

These do not resemble the Sanskrit. We cannot therefore reconstruct the original form, nor can we with any certainty determine the analogy upon which these forms arose in Greek.

Augment. The name Augment is a translation of the *αὔξησις* of the later grammarians[1]. The Augment appears in Sanskrit, Iranian, and Greek, with some traces in Latin (p. 457); it is prefixed to verbal forms only in the indicative mood. Both in the Vedas and in Homer it can be omitted, as also in those parts of Tragedy most closely allied to Epic poetry—the speeches of the Messengers.

Early theories of its origin were Buttmann's, who regarded it as a curtailed reduplication, and Bopp's, who regarded it as *a* privative (cf. p. 8).

It is true that in some verbs the augment of the preterite assumes the same form as the reduplication of the perfect, e. g. *ἐζήτησα* beside *ἐζήτηκα.* But, on the other hand, the vowel of reduplication varies according to the tense in which it occurs, and according to the nature of the verb-stem. Again, if augment is reduplication, what has become of the initial consonant, and why is the augment restricted to the indicative mood while reduplication extends to all moods alike?

As to the theory that the augment is *a* privative, apart from the fact that the augment is *ε* not *a*, this *a* privative before a vowel becomes *αν*:—e. g. *ἀ-θάνατος* but *ἄν-αιμος*, while the augment shows no sign of a nasal before vowels. Then as to meaning; Bopp's explanation makes a dichotomy of tenses into present and not-present. But what reason is there for supposing that this negation should affect only the notion of time and not negative the whole verbal notion?

We must rather look upon the augment as originally an independent prepositional word expressing priority. Thus *ἔλειπον* = Indo-European *é lei̯qom.* Subsequently it coalesced with the verb form into a single word. This union began in Indo-European times, but was not completely carried out in all cases. Thus *ἦν*, Doric *ἦς* (= *erat*), and in the Veda

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[1] The term is not used till after Herodian. Up to that time the prefix of the augment was better described as a *κλίσις* or *κίνησις* of the verb. In the *Etymologicon Magnum*, on *ἔνδυνε* there occurs the note—*οἱ Ἴωνες αὐξήσεις οὐ δέχονται.*

ás, comes from an original *é-est*. As a contraction this must be referred to Indo-European time, for the Greek contraction of εε is ει. On the other hand we find traces of the period when ἑ was still an independent sound in the arbitrary omission of the augment in Homer, e. g. βῆ for ἔβη, etc. This omission happens both in the case of the syllabic and the temporal augments. Herodotus only drops the syllabic augment in the pluperfect of compounds and in iteratives, e.g. καταλέλειπτο, λάβεσκον: but the temporal augment is often omitted, especially before two consonants, e. g. ἀρρώδεον, ἔρδον, ἔρξαν, etc. In χρῆν (=χρὴ ἦν) the omission of the augment is only apparent; ἐχρῆν is a later formation.

The augment was not only an independent element, it was also accented.

According to Wackernagel (*K. Z.* xxiii. 470), in the I.-E. language the accent rested on the augment in principal sentences, while in subordinate clauses it rested on a following syllable. The omission of the augment then should be confined to dependent sentences; *á-bhūt* = ἔφυ, *a-bhú̄t* = φῦ.

A proof of the accentuation of the augment is the rule of Greek compounds by which the accent never passes back beyond the augment, as e. g. in παρέσχον. In this particular, Greek has been more conservative than Sanskrit (cf. p. 271).

Temporal Augment. When the verb-stem begins with a vowel the augment coalesces with this vowel, and we get e.g. ἆγον (ἦγον), ὦρτο. We can hardly regard this as the result of contraction in Greek. Regular contraction of ἐ-αγον, ἐ-ορτο would give ἦγον, οὖρτο. We must rather assume that a simple lengthening of the initial vowel was regarded as characteristic of the preterite. Doric ἦς, Vedic *ás*, may point to original contraction, and afterwards upon such an analogy, a quantitative lengthening of the initial vowel stood for the Temporal Augment. In ἶκέτευσα, ὗμέναιον, as in ἦγον, the long vowels are the result of quantitative lengthening, and do not stand for ε-ι-, ε-υ-. ἴαχον in Homer stands for ἐϝιϝαχον (=εἴαχον) (cf. Monro, *H. G.* § 396).

The apparently unaugmented forms in Herodotus, viz.

αἶτεον, αἶνεον, αἶρεον, etc., and *εὔξατο, αὔξετο* of Attic may very well stand as the regular representatives of original Greek forms with *āi̯, ēu̯, āu̯*, shortened as in *Ζεύς, ναῦς* (p. 183). The long vowel of *ᾔτουν, ηὐξάμην* is a lengthening parallel to that which has taken place in *ἦγον, ὦρτο*.

Until the Ionic alphabet was adopted in Attica at the end of the fifth century there was only one sign for *ε* and *η*, but from that date onwards till the middle of the fourth century, stone records justify us in assuming *ηὕρισκον, ηὗρον, ηὐχόμην, ᾔκαζον* as Attic forms (Rutherford, *New Phryn.* p. 244).

Where a vowel followed the initial diphthong, it was lengthened and the preceding diphthong unaltered, e. g. *ηὕρισκον* but *εὐ-ηργέτουν*.

In many stems where an originally initial consonant has fallen away, we find a Syllabic and not a Temporal Augment.

The Ϝ has fallen out, e. g. in *ἐ-άγη, ἔ-αξε, ἐ-άλη, ἔ-ειπε, εἶδον* for *ἐϜιδον, εἴρυσα* for *ἐϜερυσα*. An *σ* has fallen out in *εἵπετο* √*σεπ, εἷσα* √*σεδ, εἶχον* √*σεχ*. In the aspirated *εἵπετο, εἷσα, εἷρπον* √*σερπ*, the *σ* has passed into the rough breathing, which has then been thrown back on to the augment. In the case of *εἶχον* the smooth breathing has remained because of the following aspirate χ (cf. p. 174).

An exception to this shifting back of the rough breathing on to the augment is to be found in the form *ἆλτο* from *ἐ-άλτο*, cf. *ἅλλομαι* (=*sal-io*). The smooth breathing has been extended in this tense beyond the indicative, as we find *ἄλμενος, μετ-άλμενος*.

In other cases the original initial consonant is forgotten, as in *οἰκέω, ᾤκησα*.

η as Augment.

In Greek we find *η-* as augment side by side with *ἐ-*, e. g. *ἠβουλόμην, ἠδυνάμην, ἤμελλον*, and Homeric *ἠείδη*. Similarly in the Veda, the augment is in a few instances long *ā*.

Besides these cases, an augment *η-* has also been assumed in other verbs in which an original spirant has been lost (Wackernagel, *K. Z.* xxvii. 272).

Thus in the Attic *ἐ-ώρων, ἀν-έ-ωξα, ἐ-άγην* there was a metathesis of quantity for original *ἠϜορων, ἠϜάγην*, just as in *βασιλῆα*, Attic *βασιλέᾱ*. Homer has *ἐᾱ́γην*, but (Λ. 559) *ἐάγη*, unless we read *ἐάγῃ*, the perf. subj. (Monro, *H. G.* § 42).

As the imperfect of *οἴγνυμι*, Homer has *ὠΐγνυντο*, which is for *ἐϜωΐγνυντο* and this for *ἠϜοίγνυντο*. Without metathesis of quantity we may assume an original augment *η-* in *ἠργαζόμην* for *ἠϜεργαζομην*, and in—

ἤλπιζον for *ἠϜελπιζον*.
ᾔδη for *ἠϜειδη*.
ᾖκον for *ἠϜεικον*.
ᾔκαζον for *ἠϜεικαζον*.
ἑώρταζον for *ἠϜεϜορταζον*.

A comparison with the perfect justifies this hypothesis in the case of *ἑόρακα* beside *ἑώρων*, and *ἑᾱ́λωκα* beside *ἑάλων*, where the perfect shows no trace of the augment *η-*. *ἠργαζόμην* was the Attic form up to the time of Demosthenes, and though in Demosthenes there is a wavering between *ἠργαζόμην* and *εἰργαζόμην*, the perfect is always *εἴργασμαι*. In Aristophanes, *Eq.* 1076, we have *ᾔκασεν*, but *Av.* 807 *εἰκάσμεσθα*.

A rule of Attic augmentation, which may here be noticed, is that whether a verb is compounded with a preposition or only appears to be so, yet it takes the augment after the first part of the compound (Rutherford, *New Phryn.* p. 79).

Thus *προφήτης*, *προυφήτευσεν*.
ἐπιστάτης, *ἐπεστάτουν*.
ἐνάντιος, *ἐνηντιώμεθα*.

The doublets *καθήμην*, *ἐκαθήμην*—*ἀφίει*, *ἠφίει*—*καθῖζον*, *ἐκάθιζον* are to be explained by the fact that the verb was sometimes regarded as compound, sometimes as simple.

In some cases double augmentation arose, e. g. *ἠνειχόμην*, *ἠμπειχόμην*, and was extended by analogy to such words as *ἠντεβόλουν*, *ἠμφεσβήτουν*, *ἐδιῄτων*, etc.

Tense-stems.

After the person-endings and the augment we can pass on to the consideration of the forms of the Greek verb in its various tense-stems. It is the stem which is the constant element in a group of related forms. The termination indicates differences of person and number, and also the distinctions of voice which express the relation borne by the subject to the action, the difference, that is, between Active, Passive, and Middle. Differences of Tense (*χρόνοι*) are expressed by varieties of Tense-stem, while to express Modality a suffix is added to the Tense-stem.

Present and Strong Aorist. The first group of Tense-stems consists of the Present and Strong Aorist stems. Between these stems there is in some cases no formal but only a syntactic difference—a difference, that is, of function. *ἔφην*, for example, is an imperfect, while *ἔστην*, which is similar in formation, is a strong aorist. Again, *ἔγραφον*, *ἔγεμον*, *ἐνιπτόμην* are imperfects, but the similar *ἔτραπον*, *ἔβλαστον*, *ἐγενόμην* are aorists. On the other hand the tenses which contain the present stem, viz. the present and imperfect, denote action which is progressive, as opposed to the aorist, which denotes a single act or event. A tense which singled out a definite point in what is now going on would be an aorist present. There is no tense with such a function in Greek, though, as we have seen (p. 231), such verbs as *ἄγω*, *γράφω*, in *form* are of the strong aorist type. In English such a tense may be found in the '*I go, Sir, and went not*,' of St. Matt. xxi. 30. As distinguished from the aorist, the imperfect expresses an action or state which was contemporaneous with something else. The difference may be illustrated by the Homeric line—

> *ἕλκετο δ' ἐκ κολεοῖο μέγα ξίφος, ἦλθε δ' Ἀθήνη.*

Sanskrit Conjugation-Classes. The language which comes nearest to Greek in its wealth of verbal forms is Sanskrit. The Hindu grammarians distinguished ten different Conjugation-Classes. The basis of their classification was the formation of the present stem, which they regarded as the characteristic part of the verb. Their conjugations may be distinguished into two main divisions, marked by a difference which has an important bearing upon the theory of the Greek verb. The first division comprises those verbs which show a shifting of the accent, which falls now upon the root or class sign, now upon the ending. Along with this shifting of the accent goes a variation in the form of the stem, which is full when the accent rests upon the root, weak when it rests upon the ending (Whitney, *Sk. Gr.* § 604). The second main division of the Sanskrit conjugations consists of those verbs in which the accent is never shifted from the stem to the ending, and whose present stem always ends in *a*. Answering to these two main divisions we have in Greek the distinction into non-thematic and thematic verbs.

Classification of Greek Present-stems.

In non-thematic verbs there are four classes of present and aorist stems :—

1. The Root class, in which the present stem is identical with the verbal root. In some of these there is a variation
7 of the stem in different inflexions.

2. The Reduplicated class, with or without stem variation.

3. The stem consists of the weak root with suffixes *-νῡ, -νῠ*.

5 4. The stem consists of the weak root with suffixes *-νᾱ, -νᾰ*.

Of the thematic conjugation we may distinguish five classes :—

1/2 5. The stem consists of the root, strong, weak, or reduplicated with the thematic vowel suffixed.

4 6. The stem consists of the root, strong, weak or reduplicated with the suffixes -ι̯ο, -ι̯ε. To this class belong the denominative verbs and the causatives where the stem is made up of a full degree of the root with suffixes -ει̯ο, -ει̯ε.

3 7. The stem consists of the root with suffixes -το, -τε.

6 8. The stem consists of the verbal stem with suffixes -σκο, -σκε.

9. The Nasal class.

To take now these different classes of present stems in detail.

First class.

The first class consists of those verbs in which the verbal stem is identical with the root. This class answers to the Hindu second conjugation or root-class.

(a) With stem variation.

(*a*) Most of these verbs show an alternation of the stem between a full and a weak form. The full form is found in the singular indicative and subjunctive active, as for instance

εἶ-μι Sk. *é-mi* *ἵ-στᾱ-μι.*

The weak form is found in the dual and plural of the indicative and subjunctive active, as for instance

ἴ-μεν Sk. *im-ás* *ἴ-στᾰ-μεν.*

And throughout the middle, e. g. *ἵστᾰμαι.* So in the sing. of the aor, act. *ἔχεϝα* (=*ἔχευ̯α*), but in the middle *ἔχυτο.*

In Sanskrit the variation of stem is accompanied by a shifting of the accent, but in Greek this original shifting of the accent has been usually replaced by the system of accentuation peculiar to that language, and the accent is uniform throughout.

εἶμι. In the present of *εἶμι*, *ibo*, we have

Sing. *εἶ-μι* *εἶ*, but K. 450 *εἶ-σθα* *εἶσι.*
Plur. *ἴ-μεν* *ἴ-τε* *ἴ-ασι.*

ἴᾱσι is from *ἰ-αντι* for *ἀντι*, Sk. *y-anti*, with prefix of the *ι* of *ἴ-μεν*, *ἴ-τε.*

The conjunctive is *ἴω*, instead of *ἐι̯ω*, Sk. *áy-āni.*

The optative is *ἴοιμι*, which is formed upon the analogy of the thematic verbs in *-ω.* Answering to Sk. *iyám* the proper form would be *ἰι̯ην*=*ἰην.* The form *ἰε-ίη*, which is read in T. 209, seems to be formed like *εἰδείη* and the *δεδιείην* of Plato, *Phaedr.* 251 A (cf. Monro, *H. G.* § 83).

The participle *ἰών* shows the original fem. form in the name of Demeter, Ἐπ-*ίασσα.* In Hesych. we have the gloss *ἴεσσα· βαδίζουσα*, where *ἴεσσα* perhaps stands for *ἴασσα.* In Sanskrit the stem of the masc. is *yánt*, but the nom. fem. is *yat-ī́.*

The imperfect indic. in Att. was *ᾖα*, *ᾔεισθα*, *ᾔειν*, or *ᾔει.*

The plural *ᾖμεν*, like Sk. *āíma*, has the same stem form as the singular. The 1st pers. sing. was originally *ἠι̯α.* The semivowel between two vowels should disappear, as e. g. *βασει̯ες* becomes *βάσεες*, *βάσεις* So *ἠι̯α* becomes *ἠα*, but the iota has been retained in the singular as in the plural.

In Homer we have *ἤια*, *ἤεις*, *ἤει*, 3rd pl. *ἤϊσαν* and *ἴσαν*, also the dual *ἴτην* unaugmented.

εἰμί. *εἰ-μί*, *sum*, has the strong stem *ἐσ-*, the weak *σ-* :—

εἰμί, Sk. *ásmi* *εἶ*, *εἶς* (*εἶς*), *ἐσσί*, Sk. *ási* *ἐστί*, Sk. *ásti.*

Plural *ἐσ-μέν*, after the model of *ἐσ-τέ* beside the more regular Ionic *εἰμέν*, Sk. *smás*. Both *ἐσμέν* (*εἰμέν*) and *ἐστέ* have the strong root on the analogy of the singular.

3rd pl. *ἐᾱσι*, Doric *ἐντί*, Att. *εἰσί*, Sk. *sánti*.

The proper Greek equivalent answering to *sánti* would be *ἀντί*, but the *ε* which appears in the other persons has been kept in this as well—*ἔᾱσι* (=*ἐσαντι*), I.-E. *s-ń̥ti*.

The originally weak stem of the feminine participle remains in the Doric fem. *ἔασσα* for original *σατι̯α*, *s-n̥t-i-a*, to which the *ε* of the strong stem has been prefixed. The strong stem answering to *σατ-* would be *σεντ-*, but in Greek we have *ἐών*, *ὤν*, stem *ὀντ-*, after the analogy of the verbs in *-ω*. To the influence of the same analogy we may refer the Homeric form of the imperfect, *ἔον*, and the opt. *ἔοι*.

The imperfect in Homer, *ἦα*, answers to Sk. *ásam*, while Epic. *ἔην* and *ἤην* are anomalous formations; *ásam* is represented by *ἦα*, just as *áyam* by *ἠι̯α*, in Homer *ἤϊα*.

The correct Attic form of the 1st sing. is *ἦ* (cf. Rutherford, *N. P.* 242), e. g. Aesch. *Choeph.* 523 *οἶδ' ὦ τέκνον, παρῆ γάρ*, where *παρῆ* was restored by Porson for *πάρει*. The form *ἦν*, so frequent in the MSS., is not required by the metre in the dramatists. The form *ἤμην* is post-classical.

The 2nd and 3rd pers. *ἦσθα* and *ἦεν*, Att. *ἦν*, belong in character, as already noticed, to the Perfect tense system (p. 377).

In the dual and plural we have the *η* of the singular. The 1st plur. is *ἦμεν*, where the *σ* has, according to rule, disappeared. The 2nd pers. is *ἦσ-τε*, but side by side with this form we find *ἦ-τε*, probably on the analogy of *ἦ-μεν*.

ἦσ-αν maintains the intervocalic *σ*, after the example of *ἦσ-τε*, and has the long stem of the singular. A Boeotian form, *παρ-εῖαν*, represents the regular *ἠαν*.

Conjunctive *ἔω* (=*ἔσω*), Att. *ὦ*, cf. Lat. *ero*.

Optative *εἴην* (=*ἐσ-ι̯η-ν*), Old Lat. *siem*, Sk. *syám*. As in the plural of the indicative, Greek has the *ε* of the strong stem.

The stem appropriate to the 2nd sing. imperative is the weak stem, as can be seen from the Sanskrit *é-mi* (εἶμι), imperat. *i-hí* (ἴθι). The short stem appears in Greek ἔ-στᾰ-θι, τέ-τλᾰ-θι, ὄμνῠθι. It is true, however, that τλῆ-θι, κλῦ-θι, βῆ-θι, are exceptions. The termination -θι points back to an original *-dhi*.

From the √ἐs, then, the Indo-European imperative would be *s-dhi*, which is actually to be found in the Zend *z-dhi*. In Greek, σ-θι would be the proper equivalent, but instead of this we have ἴσθι. Initial σθ- in Greek only appears in the group σθένω, σθένος, etc. However, if I.-E. *s-dhi* was pronounced *z-dhi*, and the σ of σθι in Greek was pronounced as the medial or sonant spirant, then ἰσ- may be a graphic representation of the sonant spirant for which the Greek alphabet had no distinctive character. There is no good ground for assuming a change of ε into ι in Greek, although there are such scattered instances as ἵππος beside *equus*.

An instance of ι as a prothetic vowel may be seen in ἰ-κτίς beside κτίς (Hesych.) and Epic κτιδέη (K. 335).

φημί. In φημί the strong stem was φᾱ, the weak φᾰ.

Osthoff, *Z. G. d. P.* (p. 353) makes an attempt to connect φημί with the root of φαίνω, and gets the meaning 'say' out of 'I declare myself.' Just as beside Sanskrit *bhā́mi* stands *bha-nā-mi*, so beside φημί there was originally a φανᾱμι which afterwards passed to φαίνω as δάμνημι to δαμνάω.

The only support in Greek of such a supposition is the πε-φή-σεται of P. 155.

The weak stem appears in φᾰμέν, φᾰτέ, and in the imperf. ἔφᾰμεν, ἔφᾰτε, ἔφᾰσαν.

ἠμί. ἠμί (Arist. *Ran.* 37; *Nub.* 1145). ἠσί, Sapph. *Fr.* 97, but also ἠτί in Alcman. The preterite ἦν occurs in the phrase ἦν δ' ἐγώ, and the 3rd sing. ἦ in the phrase ἦ δ' ὅς. The verb may be compared with Sanskrit perfect *āha*, I.-E. √*ēgh*. ἦ is perhaps for ἠκ-τ, cf. ἄνα for ἀνακτ (p. 200).

This 3rd sing. ἦ is the most frequent and oldest form of the word, and ἠμί, ἠσί, ἠτί are post-Homeric.

ἔραται. ἔραται.—The root of this word appears to be *rem*. The

Greek ε is therefore prothetic. There is a by-form ἐράομαι, and in Homer we find ἠράσατο, ἠράσσατο, and ἐράασθε, just as beside ἄγαμαι Homer has ἀγάασθε. Attic writers in prose have only ἐράω.

The Sk. √*ram* means 'to enjoy oneself' only in the middle, e.g. Sk. *rámate*. This sense may come in I. 65 ὃς πολέμου ἔραται. To this root we can refer the adv. ἠρέμα.

In Homeric ἔρ-ος we do not find the full root, but we may compare ἱστ-ός, ἱστ-ίον, from the root of ἵστη-μι, for a similar mutilation of the root in the derived word. With ἔρως beside ἐράω we may compare γέλως and γελάω.

In κεῖ-μαι we have the strong stem throughout. So in Sanskrit the √*çī* has the *guṇa* strengthening throughout, e.g. *çáye*, *çáyāna*. κεῖμαι.

ἧμαι is to be regarded as a perfect (*Z. G. d. P.* 171 ff.); 2nd sing. ἧσαι, 3rd ἧσται, Sk. *ās-tē*. Plur. ἥμεθα, ἧσθε, ἧαται but in the MSS. εἵαται. ἧμαι.

κάθ-η-ται and ἧνται are forms upon the model of ἧμαι, ἥμεθα, where the σ has disappeared regularly. In Homer and Herodotus we find ἕαται for the 3rd pl., I.-E. *ēs-n̥tai*.

The participle ἥμενος has not got the perfect accentuation.

To the first class of verbs whose verbal stem is identical with the strong aorist stem, belongs the aor. ἔστην, Sk. *ásthām*. ἔστην.

In τίθημι, δίδωμι, ἵημι, we find a weak aor. in -κα. But in ἵστημι we have no aor. in -κα of the form *ἔστᾰκα, because of the resemblance such a form would have borne to the perfect. In the same way we have ἔβην and not *ἔβᾰκα, ἔφυν and not *ἔφῡκα, ἔδῡν and not *ἔδῡκα.

In the inflexion of ἔστην the long stem remains in the plural. The 1st pl. ἔστημεν is a new formation for ἔστᾰμεν, as can be seen by a comparison with the weak stems of ἔδομεν, ἔθεμεν, εἷμεν. In ἔβην we find stem variation in the Homeric dual βάτην and the plural ὑπέρβᾰσαν, side by side with the long βήτην.

The stems *θε-* (in *ἔ-θε-μεν*, *ἔ-θε-το*, Sk. *ádhi-ta*)—*ἑ-* (in *εἷμεν* from *ἕσεμεν*) and *δο-* (in *ἔδο-μεν*, *ἔδο-το*, Sk. *ádi-ta*), are in reality for *θα-*, *ἁ-*, *δα-*, as we have seen in the chapter on Ablaut (p. 236). The formation of the aors. in *-κα* will be dealt with under the head of the perfects in *-κα*.

ἔφθην. In *ἔφθη-ν* √*φθᾱ*, the long vowel is persistent throughout the indicative, except in the 3rd pl. *φθάν* (Λ. 51), which is like *ἔβᾰν*, *ἔστᾰν*. Still in the midd. we have *φθᾰ́μενος* (N. 387). Attic keeps the long vowel throughout the indic. active, e. g. *ἔφθη-μεν*, *ἔφθη-σαν*, while the short vowel appears in the Attic sigmatic aorist *ἔφθασα*.

√*κτεν.* The root *κτεν*, Sk. *kṣan*, occurs in the weak form in *ἔκταμεν* (*ἔκτη̥μεν*), *ἀπ-έκτα-το*, Sk. *ákṣata*. The 3rd sing. *ἔκτᾰ*, *ἀπέκτᾰ* is a new formation, with the weak stem of the plural, for *ἐκτεν(τ)*. In the 3rd pl. we have *ἔκτᾰν*, and in the subj. *κτέωμεν*, which follow the analogy of roots in ā, cf. *ἔστᾰν* and *στέωμεν*. From the Sanskrit we see that the ending of the 3rd pl. is *-αν*. This added to the weak stem of *ἔκτενα* would give *ἐκτναν*, but this form has been assimilated to *ἔσταν*, and so we have *ἔκτᾰν*.

Like the 3rd sing. *ἔκτᾰ* we have the Homeric *οὖτᾰ*, just as *οὐτάμεναι*, *οὐτάμενος* resemble *κτάμεναι* and *κτάμενος*.

ἔχεα, etc. The aorists *ἔχευα*, *ἔχεα*, *ἔσσευα*, *εἶπα*, *ἤνεικα* (Att. *ἤνεγκα*), are inflected like the *σ*-aorist. In the plural we ought to find the weak stem, viz. *ἐχυ-μεν*, but instead of this we have the stem of the singular. The weak stem appears in the Homeric *σῦτο*, *χῠ́το*, and in *χῠ́μενος* (Aesch. *Choeph*. 401, etc.). A 3rd pl. *ἔχε-αν* is found in Homer (Σ. 347; Ω. 799). The tense as originally inflected ran *ἔχεα*, *ἐχευς*, *ἐχευ(τ)*, *ἐχυμεν*: compare the Sanskrit *áçravam*, *áçrōs*, *áçrōt*, etc. (cf. Monro, *H. G.* App. A. 5).

In these aorists, as well as in the perfect, the sigmatic aorist, the aorists in *-κα*, the pluperfect in *-εα*, and the imperfect *ἦα*, *ἤϊα* or *ᾖα*, the *α* is not an original part of the tense-stem, but belongs to the ending of the 1st pers. sing. From this it has been extended throughout the tense, and we find it in all persons as a connecting vowel between the stem and the termination. Originally these tenses were formed in the same way as other non-thematic tenses: the ending was added directly to the stem. The process of the extension of *a* may be exemplified in the ἔας, ἔατε (for ᾖσθα, ᾖτε) of Herodotus, where ἐα- is treated as the stem. The *a* of the first pers. sing. is to be identified with the -*ν* (originally -*m*) of ἔφη-ν, ἔβη-ν, ἔφυ-ν, etc.

ἔβην.

ἔβην, Sk. *ágām*; ἔφυν, Sk. *ábhūv-am*. The *m* of the ending in Sanskrit becomes -*am* when it follows the semivowels *i̯* or *u̯* (which are then represented by *y* and *v*) or after a consonant. In Greek under such conditions *m* becomes *a*.

ἔπτην.

The aor. ἔπτην, Dor. ἔπτᾱν, and προσέπτα (Aesch. *Pr.* 555), shows no mark of stem variation in the indicative. It is usually put under a pres. ἵπτημι, but the root is πετ of πέτομαι, particip. πτάς.

ἔφυν.

ἔφῡν shows the weak φῡ of Ablaut III throughout: ἔφῡν, ἔφῡ-μεν. So in Sanskrit in the same way we find *ábhūvam* in the singular, as well as *ábhūvan* in the plural.

(β) Verb stem with *schwa.*

(β) A verbal stem consisting of the root + ə, the indeterminate vowel, is to be found in κρέμα-μαι and ὄνο-μαι, unless we are rather to regard the root as disyllabic and ending in κρεμə-.

The verb ἐμέω is probably a later formation for the more original *ϝεμε-μι, Sk. *vámi-mi*, just as beside the older ἄγαμαι we find ἀγάομαι, and beside τίθημι τιθέω, and kindred forms.

Hesychius has κεδᾶται· σκεδάννυται. This κεδάομαι, just like the present κεράω, beside κέρα-μαι, κεράννυμι, has left the -μι inflexion and followed the analogy of verbs in -ω.

Other instances of this transference from the -μι to the -ω conjugation may be seen in—

ἐράομαι : ἔραμαι.
δεικνύω : δείκνῡμι.
ἴω, ἴοιμι, ἰών : εἶμι.

ἐρύω : *ἔρυσθαι.*
ὀμνύουσι : *ὀμνύᾱσι.*
κιρνᾷ : *κίρνημι.*

(γ) Long stem without Ablaut.

(γ) We have a verbal stem in a long vowel without stem variation in *ἄημι* for *ἄϝημι, ἄϝησι, ἄϝητο*—*ἔγνων, ἔγνω-μεν.*

The shortening of the vowel in *ἄεισι*, Doric *ἄεντι*, in *γνόντ-ες, γνοίην*, etc. is a change peculiar to Greek (p. 183).

Other instances of long stems without variation are *ζῆθι, ἔζην, χρῆσθα, (ξύμ)βλητο, πλῆτο*, the Homeric *κατα-πτή-την* (Θ. 136), perfect part. *πεπτηῶτες*, and with the secondary weak degree of the root, *ἐρρύην, ἐμάνην, ἑάλων.*

Under the first class of verbs we must consider certain aorist formations, which from the nature of the stem belong to this head.

Aorists in -*ην*.

The strong aor. pass. in -*ην* is formed by affixing -*η* to the short form of the verb stem. As we find nothing resembling these formations in other European languages, we are driven to suppose that they are formations by analogy within the limits of the Greek language (App. p. 488).

Brugmann (*M. U.* i. 71) regards the aorists pass. in -*ην* as new formations in Greek framed upon the model of active preterites such as *ἔβλην* (Epic. *ξυμβλήτην* φ. 15) and *ἔσβην.* Thus the paradigm *ἐφάνη-μεν, φανείην, φανῆναι, φανείς*, answers to that of *ἔσβη-μεν, σβείην, σβῆναι, σβείς.* The stem in most cases shows the weak form, e. g. *ἐλίπην, ἐῤῥύην.* The *η* vowel is not limited to the aorist but appears in the future, e.g. *ῥυήσομαι, φανήσομαι.*

The personal endings of the aorists in -*ην* are active, but their meaning is intransitive or else passive. Thus the intransitive meaning is to be found in *ῥυῆναι, σαπῆναι, τακῆναι, μανῆναι.* The passive meaning according to Monro (*H. G.* § 44) was an adaptation of the intransitive meaning; e.g. *ἐκόπη ὑπ' αὐτοῦ* is no more passive than *ἀποθανεῖν ὑπ' αὐτοῦ.* The change of meaning may be illustrated from the perfect. Thus the Homeric *ἔφθορα, τέτροφα* are intransitive, but in

Attic transitive (Soph. *El.* 306); the Homeric *τετιηώς*, *κεκοτηώς*, which are active in form, are almost passive in meaning. What for instance is the distinction of meaning between *τετιηότι θυμῷ* and *τετιημένος ἦτορ*? So too we may instance *ἔσβην* (=was quenched) and the use in Attic of the actives *ἐκπίπτω* and *πάσχω* as passives, also of *γίγνομαι* as the pass. of *ποιέω*, and *κεῖμαι* as perf. pass. of *τίθημι*.

Answering to the aorists in *-ην* we have certain other aorists differing from them only in the character of the vowel of the suffix.

Thus like aor. *ἐφάνην* fut. *φανήσομαι* we have *ἐβίων* fut. *βιώσομαι*—*ἑάλων* fut. *ἁλώσομαι*—*ἐγήρᾱν* fut. *γηράσομαι*, aor. *ἐγηρᾱσαν* (Aesch. *Suppl.* 894)—*ἔπέ-πλως*, part. *ἐπι-πλώς* (Z. 291).

With these we can rank the *ἔδρᾱν* of the comedians, and *ἔτλᾱν* (*ἔτλην*).

We can explain *ἐβίων*, *ἐγήρᾱν* by assuming old presents in *-οω* and *-αω*, but cannot assume a pres. in *-εω* for all the aorists in *-ην*. Similarly *η* appears in the futures *βουλήσομαι*, *μαθήσομαι*, *ἀλεξήσω* without there being any corresponding present in *-εω*. We must rather suppose that there were a few forms such as *ἔσβην*, *ἔβλην*, upon which model other formations were afterwards made.

In Homer the ending of the 3rd pl. is *-εν* for *-ηντ*, as well as Attic *-ησαν* (cf. p. 183).

-ην appears on inscriptions as the 3rd pl. ending, but the *μάνθην* of Δ. 146 is best explained as a dual.

Of aorists in *-ην* found only in Homer we have the following forms, *ἐάλη*, *ἐτμάγην*, *τερσήμεναι*, *τάρπημεν*, *ἀναβροχέν*, *διατρυφέν*.

Homeric and Attic are *ἐάγην*, *ἐπάγην*, *ἐρράγην*, *ἐφάνην*, *ἐχάρην*, *ἐπλήγην*, *ἐρρύην*, and others.

Attic alone are among others *ἐγράφην*, *ἐμάνην*, *ἐσφάγην*, *ἐτάκην*, *ἐτάφην*, etc.

Aorists in -θην.

The aorist in *-θην* is a formation modelled upon that of the aorist in *-ην*. As from *γράφω* we have *ἐγράφην*, so from **σχέθω*, *ἐσχέθην*. To explain the *θ* we must turn to the numerous presents in *-θω* (cf. Curt. *Verb.* p. 500), such as *βρίθω*, ἄχθομαι, γηθέω, etc. The formation was afterwards extended by analogy, and from Homer onwards became very common. Thus even in Homer the proportion of aorists in -θην to aorists in -ην is that of six to one.

In some instances the two forms stand side by side, e.g.:—

δάμεν : δμηθέντα.
μιγῆναι : μιχθήμεναι, and some others.

The aor. in -θην usually has the present stem in Attic, but the weak form of the root is to be found in Epic τραφθῆναι, τάρφθεν, τάθη, etc. In Homer beside ἐκλίθη we find also ἐκλίνθη, beside διέκριθεν, κρινθέντες: in later Greek the forms with the nasal dropped out of use. Similarly in the ἐλάμφθην of Herodotus (Attic ἐλήφθην), the nasal of the present stem has intruded.

-σθην. The ending -σθην properly belongs to s and dental stems, but has been extended to other verbs as well. This phenomenon must be considered along with the perfect pass. (cf. Rutherford, *N. P.* p. 99). The general rule is that 'if the aorist passive has not the sigma the perfect also is without it.' It was a feature of late Greek to introduce sigma improperly, as for instance in the late forms παραβεβασμένος, ἐβάσθην for βεβαμένος and ἐβάθην.

Reduplicated class. II. We can now pass on to the second class of verbs, which have a reduplicated verbal stem. The vowel of the reduplication is ι. This is the third class of the Sanskrit grammarians:—

ἵστημι	Sanskrit *ti-ṣṭhāmi*	Latin *si-sto.*
πίμπλησι	*píparti.*	
βιβάς	*jígāti.*	
ἵζει	*sī́dati*	*sidit.*
	píbati	*bibit.*

Sanskrit disagrees with Greek in having *a* as the vowel of reduplication in—

δίδωμι	*dádāmi.*
τίθημι	*dádhāmi.*

A reduplicated stem is shown in the Homeric δίδη beside δέω.

Greek shows the ι vowel of the reduplication further in μίμνω (√μεν), πίπτω (√πετ), ἴσχω (=σι-σχω √σεχ), ἰάχω (√Ϝαχ), ἴλλω (=ϜιϜλω √Ϝελ).

An exception in Greek appears in ἐγείρω, Sanskrit *jágarmi*.

(*a*) With Stem variation.

We find stem variation in—

ἵστᾱ-μι ἵστᾰ-μεν ἵστᾰ-ται, τίθημι τίθεμεν, δίδωμι δίδομεν.

Corresponding to Sanskrit *daḍh-más*, *dad-más*, we should rather expect τιθ-μέν, διδ-μέν. τίθεμεν, δίδομεν have been assimilated to the forms ἔθεμεν, ἔδομεν.

In the same way with ἵημι, ἵεμεν, the short ε of the plural is not original.

In Homer we have ἵημι, 'send,' ἵεμαι, 'desire.' We have the passive of ἵημι, 'to send,' in Δ. 77 σπινθῆρες ἵενται and χ. 304.

ἵεμαι, meaning 'desire,' has the ι always long, e.g. in οἴκαδε ἱεμένων, where it also shows traces of an initial consonant now lost. The two verbs are probably from different roots, ἵημι √*se*, but ἵεμαι √*vi*.

The third plural answering to Sanskrit *dádh-ati*, *dád-ati* should be τίθ-ᾰτι, δίδ-ᾰτι. In Doric the forms are τίθεντι, δίδοντι with the same short vowels as τίθεμεν, δίδομεν.

On the model of ἀγνύ-ᾱσι are the Attic τιθέ-ασι, διδό-ασι and ἱστα-ασι, ἱστᾶσι. The Ionic τιθεῖσι, διδοῦσι are to be explained by the Doric τίθεντι, δίδοντι. The properispomenon accent is irregular.

The conjugation of τίθημι and δίδωμι has been influenced by the analogy of the contracted verbs. Thus beside διδοῦσι, as though from *διδῶ, we have ἐδίδουν, ἐδίδους, ἐδίδου in the imperf. and δίδου in the imperative; beside τιθεῖσι are τιθεῖς, ἐτίθεις, ἐτίθει and imperat. τίθει as if from τιθῶ. These are the Attic forms (Ruth. *N. P.* p. 316). Porson on *Eur. Or.* 141 condemned ξυνιεῖς, τιθεῖς of the present indicative on the ground that if these forms were correct we ought also to have τιθῶ, τιθεῖ, τιθοῦμεν, etc. But this verb affords an instance of partial and incomplete analogy; it has not been wholly assimilated to the conjugation of the verbs in -εω, but only influenced in a few of its forms. In the same way with δίδωμι and the verbs in -οω. Cf. also Cobet, *Misc. Crit.* p. 282.

Other instances of points of contact between the verbs in -*μι* and the contracted verbs may be seen in the imperfect *ἐδάμνα, ἐκίρνα, πίτνα, κιχείς*: in the present indicat. *ἀνιεῖς, μεθιεῖς, μεθιεῖ, τιθεῖ* (the MSS. have usually *ἀνίεις*, etc.), *διδοῖς*: in the partic. *βιβῶντα* and in the fem. *βιβῶσα* (cf. Monro, *H. G.* § 18).

(β) Without Stem variation. (β) Reduplicated verbs which show no stem variation:—
δίζημαι, διζήμενος (*ἀρί-ζηλος, ζη-τέω*), and also in Theocritus and late poets, *δίζομαι,* which has followed the analogy of the thematic conjugation.

κίχημι, κι-χή-την, κι-χή-μενος. In *κιχείς* and *κιχείη* the vowel has been shortened according to rule.

πίμπρημι is a present unknown to Homer who has (I. 585) *ἐνέπρηθον.* We have *ἐμπιπρᾶσι* (Thuc. 3. 74), *πιμπρᾶσι* (Eur. *Troad.* 299). The verb stands parallel to *πίμπλημι.*

πίφρημι is only found in Aristotle's *ἐσπιφράναι*, but common in Attic are *ἔκ-φρες, ἐπ-εισ-φρῶ, δια-φρή-σουσι.* These point to a variation of the stem and therefore the verb should rather rank in the same class as *τίθημι*, etc. The √*φρη* is connected with √*φερ* of *φέρω.* With *πί-φρη-μι* we may compare Sanskrit *bi-bhar-mi* (cf. p. 100).

πίμπλημι is from Homer onwards parallel to *πλήθω.*

We find *πλάθουσι* in Aesch. (*Choeph.* 589), but the *ē* appears to be original; cf. *πλῆθος*, *plenus*, etc. A variation of the stem appears in *πίμπλᾰ-μεν*, Sanskrit *pipṛ-*, where Greek *λᾰ-* answers to Sanskrit *ṛ*, (cf. p. 100). But the 1st pers. sing. answering to *πιμπλᾰ-*, Sanskrit *pipṛ*, should be *πί(μ)πελμι*, Sanskrit *píparmi.* Instead of this *πί(μ)πελμι*, we have *πίμ-πλη-μι* as in *ἐπλή-μην*, which we are justified in ranking under the head of reduplicated stems without stem variation. The nasal has dropped out in the Homeric *ἐμπίπληθι* (Φ. 311); cf. *ἐμπιπρᾶσι* (Thuc. 3. 74 above).

The Epic forms *τιθήμενος, τιθήμεναι* as well as *δίδωθι* (*γ.* 380) are new formations ranking under this head.

Third Class. III. The third class of verbs consists of those whose verb-stem is made up of the weak root + *νῡ*. This is the Sanskrit fifth class :—

ἄγ-νῡ-μι *ἄγ-νῠ-μεν*,

corresponding to Sanskrit *-nó-*, *-nu-*, e.g. √*su*, (to press out) :—

su-nó-mi *su-nu-más*.

A comparison of Sanskrit *-nó-* and Greek *-νῡ-* of the strong form points to original Indo-European *-neu̯*. This should in Greek be represented by *-νευ-* and so originally we should have *-νευ-μι*, conj. *-νεϝω*, impf. *-νεϝα* (= *νεϝm̥*).

In this way we may explain *κίνυται* beside *κινέω* for *κινέϝω* (De Sauss., p. 187). Answering to Sanskrit *áçinavam*, we should have in Greek *ἐκίνεϝα*, but through the analogy of the thematic conjugation, we have *ἐκίνεϝον* = *ἐκίνουν*.

The 3rd pl. *ἀγνύ-ᾱσι* is for *ϝαγ-νύ-αντι*, cf. Sanskrit *çak-nu-vánti*. The *νυ* in Greek has remained and has not passed into the consonantal *νϝ*, in which case *ἀγνυ-αντι* would have become *ἀγνϝαντι* = *ἀγναντι* = *ἀγνᾱσι*. The Ionic *ἀγνῦσι* is a new formation which for form as well as accent may be compared with *τιθεῖσι*. *ἄγνυνται* is likewise a new formation in place of *ϝαγ-νύ-αται*, cf. Sanskrit *āp-nuv-átē*.

Other instances of the weak root with suffix *-νυ-* appear in *τῐ-νύμεναι* (Eur. *Or.* 323), *μῐ-νύ-θω* (with an additional suffix), *τά-νυ-ται*, Sanskrit *ta-nu-té*, cf. with strong stem *τείνω* (*τεν-ι̯ω*).

δείκ-νῡμι, *ζεύγ-νῡμι*, *πήγ-νῡμι* are exceptions to the rule, as they show the strong form of the root. These are not to be regarded as original formations. Some of the presents of this class, e. g. *ζεύγνυμι*, *ὄλλυμι* (for *ὀλ-νυ-μι*), *ὄμνυμι*, *δείκνῡμι* are common to all periods of Greek, but the class is mainly Homeric and poetic, e. g. *ὄρνυθι*, *δαίνυ*, *ἄγνυτον*, *στορνῦσα*, *ἀπομόργνυ*, *ἐέργνυ*, *ῥηγνῦσι*, *γάνυται*, *τάνυται*, *ἤνυτο*, *κίνυντο*, etc.

The forms in *-αννυμι*, *-εννυμι* are post-Homeric, e.g. *κορέννυμι*, *στορέννυμι*, *κεράννυμι*, etc.

Upon the model of *ζώννυμι* (for *ζωσ-νυμι*, cf. *ζωσ-τήρ*), *ἀμφιέννυμι* (for *ϝεσ-νυμι*, cf. *ἐσ-θής*) we have the new formations *ῥώννυμι*, *στρώννυμι*, *ζέννυμι*, *κορέννυμι*, *πετάννυμι*. In the Lesbian dialect, as we have already seen (p. 184), double *νν* is frequently the result of the assimilation of μ, ν and σ, e.g. μῆννος for μην-σος.

In the other dialects the double consonant was simplified and a preceding short vowel was lengthened by compensation (cf. p. 185).

Other instances are to be found in ἀλγεινός, stem ἀλγεσ-: εἵνυμι √Fες, cf. ἐσ-θής, and ζώνη √ζως, cf. ζωσ-τήρ.

If these forms are regular, why do we find ζώννυμι, κορέννυμι, etc., where the double νν apparently points to original σν? In Homer such forms might be explained as Aeolic, for we there find, beside the Ionic φαεινός, the Aeolic ἀργεννός and ἐρεβεννός, and so in the same way ἕννυμι can be regarded as an Aeolic form existing beside the regular Ionic καταείνυσαν (Ψ. 135, according to the reading of Aristarchus).

Such an explanation will not hold for Attic and Ionic prose, as we do not expect to find Aeolisms there as in Homer. In Herodotus we find σβέννυμι and ζώννυμι, but none of the four-syllabled presents in -αννυμι, -εννυμι.

De Saussure has explained the doubling of ν as purely rhythmical. Thus σκε̆δᾰ-νῠ-με̆ν was altered to σκεδάννυμεν to avoid four successive short syllables. But where else shall we find instances of such a rhythmical doubling of consonants in Greek? Besides this, such an explanation only touches forms like κορέννυμι, στορέννυμι, which are late, and neglects the early ζώννυμι and σβέννυμι.

Brugmann's explanation (*K. Z.* xxvii. 589) is better. The regular forms were εἵνυμι and σβείνυμι, for which last we can compare the gloss of Hesychius, ζείνυμεν· σβέννυμεν. But on the analogy of forms where the σ of the root regularly remained, e.g. ἕσ-σω, ἕσ-σαι, ἕσ-ται, σβέσ-σαι, ἐσβέσ-θην, ἄσβεσ-τος, ζωσ-τήρ, the forms εἵνυμι, σβείνυμι, ζώνυμι became ἕσ-νυμι, σβέσ-νυμι, ζώσ-νυμι. So with σμ. Beside εἷμαι, εἱμένος, where the σ has according to rule disappeared, we find ἠμφίεσ-μαι, ἠμφιεσ-μένος, ἔσβεσ-μαι, ἔζωσ-μαι, ἐσ-μέν, where the σ has again come in before the nasal on the analogy of other forms where it is regular, as e.g. in ἠμφίεσ-ται and ἐστέ. But while this revived σμ remained unaltered, the revived *σν* was assimilated to *νν*, and so we have *ἕννυμι*, *σβέννυμι*, *ζώννυμι*.

Upon the model of *ζώννυμι* were formed the later *ῥώννυμι* and *στρώννυμι*. Upon the model of *ἕννυμι*, *ἀμφιέννυμι*, and *σβέννυμι* were formed the later *κορέννυμι*, *πετάννυμι*.

Thus *ἠμφίεσα* (σ. 361)	*ἠμφίεσμαι* (Attic).
ἐκόρεσα (Post-Homeric and poet.)	*κεκόρεσμαι* (late Attic).
ἐπέτασα (ε. 269, etc.)	*πεπέτασμαι* (Hdt. 1.62), *πέπταμαι* (Ep. and Attic).

The similarity of the tenses and the fact that *ἀμφιέννυμι* was regarded as a simple verb, as is proved by the augment of *ἠμφίεσα*, led to the analogous formation of the pres. tenses *κορέννυμι*, *πετάννυμι*.

Fourth Class.

The fourth class of verbs consists of those which add on *νᾱ*, *νᾰ* to the root. They are nearly all confined to Homer, and are non-thematic, e.g. *δάμ-νη-μι*, *κίρ-νη*, *περ-νάς*, *σκίδ-να-ται*, *πίλ-να-ται*, *μάρ-να-ται*. This is the Sanskrit ninth class.

In the case of *κιρ-*, *σκιδ-*, *πιλ-* we must note the substitution of *ι* for *ε* (p. 75).

Variation of the quantity of the suffix is found in—

	δάμ-νᾱ-μι	*δάμ-νᾰ-μεν.*
Compare Sk.	*çṛ-nā́-mi*	*çṛ-ni-más.*

Here we have an unexplained relation between Greek *νᾰ* and Sanskrit *ni*.

A weak degree of the root is to be found in *μάρ-νᾰ-μαι* and *δῠ́-να-μαι*. The lengthening of the *δυ-* in Homeric *δῡνάμενος* (α. 276) and *Δῡναμένη*, one of the Nereids (Σ. 43) is purely metrical.

Beside *πέρνημι*, *πέρναμαι* we may set *πορνάμεν· πωλεῖν* in Hesychius, where *πορνάμεν* is Aeolic for *παρνάμεν* (=*πρ̥ν-*), cf. Sanskrit *pṛ-nā́-mi*.

Verbs in *-ναμι* pass over to the conjugation in *-ναω*, just as verbs in *-νυμι* to the conjugation in *-νυω*—*πίτνημι*, e. g. passes to *πιτνάω*.

Thematic Verbs.

We come now to the second main division of Greek verbs, the Thematic conjugation, answering to those Sanskrit verbs which form the present stem by the addition of *a* to the root, and which do not shift the accent to the ending. In Sanskrit this thematic vowel is throughout *a*, in Greek it takes the character of ε and ο, a variation which is to be regarded as original.

The terminations of these verbs in Sanskrit are the same as those of non-thematic verbs.

Thus *φέρ-ω* Sanskrit *bhár-ā-mi.*
φέρ-ο-μεν Sanskrit *bhár-ā-mas.*

Thematic vowel in pres.partic. In the present participle midd. Greek generally has *-ο-μενος*, but in certain dialectic forms we find indications of *-ε-μενος*. Thus Delph., Locr. *καλείμενος*, Arcad. *ἀδικήμενος*, Pamphyl. *βωλήμενος*, Elean *καδαλήμενος*. With these forms we may compare the endings of the infinitive in *-ε-μεναι*, *-ε-μεν*, viz. *ἀρχ-έμεναι*, *φερ-έμεν*, *ληγ-έμεναι*, and such participial forms as *βέλ-εμνον*, *τέρ-εμνος*.

Wackernagel (*K. Z.* xxvii. 86) has explained the *η* of the dialectic *ἀδικήμενος*, *βωλήμενος* as arising out of *-ει̯ε-*, just as *βασιλῆες* has come from *βασιλ-ει̯ε-ϝες* (cf. p. 328). This *ει̯ε* is to be found in the verbs in *-εω*. We may illustrate it by the instances of so-called irregular contraction in Homer—*ἀπειλή-την*, *ὁμαρτή-την*, *καλή-μεναι*, *πενθή-μεναι*, *ποθή-μεναι*, *φιλή-μεναι*, *φορῆ-ναι*, *ἀλιτή-μενος*, *τερσή-μεναι*. Beside these forms we may set the Aeolic inflexions *φίλη-μι*, *φίλη-μεν*, *φίλεισι* (for *φίλεντι*), *φιλήμενος*, and the Latin *monēmini*, *monēmus*, etc. It is clear that we cannot explain Homeric *ἀλιτήμενος* as a contraction of *ἀλιτε-όμενος*. It is rather a contraction of *ἀλιτε-εμενος* for *ἀλιτ-ει̯ε-μενος*. This is not the regular Greek contraction of εε, but must be regarded as an inherited original contraction, as was assumed in the case of the augment, e.g. *ἦα* for *ἐ-εσα* (p. 385).

The question of the contraction of εε is complicated by the fact that down to the archonship of Eucleides the symbol ε in the Attic alphabet had to do duty for the three sounds, ε, ει, η. We do not know at what date the Homeric poems were written down, and how far those who wrote them down were careful to distinguish between the sounds of η and ει. It is certain at any rate that many forms of the verbs in -εω which would in Attic show ει, in Homer show η, and it is possible that in other instances as well we should in Homer substitute η for ει. This question will be further considered in dealing with the present stems of the contracted verbs. For the present we are only concerned to emphasize the fact that in the pres. participle midd. the thematic vowel is in some instances ε, and not ο.

Fifth Class. The fifth class of verbs consists of those thematic verbs whose present stem is formed by the addition of the thematic ε and ο to the root, whether in a full or a weak form. This class corresponds to the first class of the Indian grammarians.

Thus √*budh*, to know; pres. stem *bṓdh-a*.

A. (1) Full forms of the root are to be found in πλέκω, λέγω, ὀρέγω, στέγω, δέχομαι, ἔχω, βλέπω, τρέπω, μένω, φέρω, θέλω, etc., and where σ has dropped out—ζέω, νέομαι, τρέω.

(2) Full forms with a liquid in δέρκομαι, σπέρχω, πέρδομαι, πέρθω, τέρπω, ἕλκω, ἔλπομαι, etc.

(3) With a nasal in φθέγγομαι, ἐλέγχω, ῥέγχω, σπένδω, πέμπω, μέμφομαι, etc.

(4) With the semivowel i̯ in ἐπείγω, ἐρείπω, λείβω, λείπω, λείχω, νείφει (unless νίφει), πείθω, φείδομαι, etc.

(5) With semivowel u̯ in ἐρεύγομαι, ἐρεύθω, εὕω, πεύθομαι, σπεύδω, φεύγω, πλέω, ῥέω, πνέω, etc.

(6) With ā, Ionic and Attic η, in ἥδομαι, θήγω, λήθω, σήπω, τήκω.

(7) With η in ἀρήγω, μήδομαι, λήγω.

B. The weak root, which is less common, appears in νίφει (if not νείφει), γλύφω, γράφω, ἄγω, λίτομαι, μάχομαι, ἄρχω, ἄρδω, ἄλθω, etc.; βόλομαι, ὄθομαι, ὄρομαι, ἄγχω, ἄντομαι, βλάβεται.

The weak form of the root without vowel appears in the aorists ἔ-σχ-ον, πτ-έσθαι, περι-πλ-όμενος, and with the third degree of Ablaut in κτανεῖν, ταμεῖν, βαλεῖν, πταρεῖν.

These two groups of verbs with full form of the root and verbs with weak form of the root may be distinguished as Imperfect-Presents and Aorist-Presents (cf. p. 231). The majority of thematic presents show in the present stem either ĕ or a corresponding long vowel, that is, they are in the second degree of Ablaut. Such presents as λέγω, *tero*, *feido*, τᾱ́κω, κλώθω, *vādo*, correspond to the 1st conjugation class of the Sanskrit grammarians, the members of which have the verbal stem accented, e.g. *bháva*, from √*bhū* (Whitney, *Sk. Gr.* § 606). These are the *Imperfect Presents*, as with these verbs the present stem is identical with the imperfect.

The original Indo-European language had two classes of thematic verb-stems—

(1) With a full root, accented paroxytone.

(2) With a reduced root, accented oxytone.

In Sanskrit we have a series of oxytone thematic present-stems with a reduced root, which constitute the sixth conjugation class of the Hindu grammarians, e. g. *sṛjá* from √*sṛj*, *tudá* from √*tud*. To this class in Greek correspond the presents *γράφω*, *γλύφω*, *λίτεσθαι*, etc., with the reduced root but with paroxytone accent. These presents may be called Aorist-Presents, as combining the reduced root of the Aorist stem with the accentuation and endings of the Present. Some of these stems remain as isolated aorists, e. g. *ἐλθεῖν* (and not **ἔλθω*, as *στίχω* from *στιχεῖν*). Beside Greek *λακεῖν* we have the Latin present *loquor*.

In the Greek *γενέσθαι* and *ἑλών* we must notice that though these forms have the full form of the root, yet they have the accent of stems with the weak root, e. g. *λιπεῖν*.

In *ἄρχω*, *ἄγχω*, as in *θάλπω*, *λάμπω*, it is difficult to determine the nature of the present stem, owing to the absence of any criterion for determining the quantity of the *a*. Compared with Sanskrit *áhati* and the Latin *ango* it would seem that the *a* of *ἄγχω* was short, and that the *ἀν*- stands for a nasal sonant.

The *αὐ*- of *αὔω* corresponds to Sanskrit *uṣ*-. Thus we may compare Aeolic *αὔ-ως* with Sanskrit *uṣ-ás*. The corresponding long stem appears in *εὔω*, Latin *uro*. Perhaps the *a* of *αὔω*, *ἄγχω* and *ἄρχω* is prothetic as in *ἀ-μέλγω*[1].

Many of the words comprised in the group of verbs under discussion are not actually to be found in the present indicative, which we only obtain by inference, viz. *ἀπο-δρύφοι*, *ἄντεσθαι*, *ἤντετο* (? aorist), *αἰθόμενος*, *αἴδετο*, *αἰδόμενος*, *αὖε* (Λ. 461), *ἔφθιε*, *δίον*, *δίεσθαι*, *ἔκιον*.

To the fifth class belong the verbs whose stem is formed by

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[1] We can here mention what is pointed out by De Saussure (*Mém.* 276) that the Arian sonants i̥, u̥, r̥, l̥, m̥, n̥, are represented in Greek in certain instances by a corresponding sonant with a vowel, usually *a*, preceding—

Sk.	*u*, *uta*		Gk. *αὖ*, *αὖτε*.
	vi	Lat. *avis*	Gk. *αἰετός*.
	√*ukṣ*		Gk. *αὔξω*.
	uṣ-ás	Lat. *aurora*	Gk. Aeol. *αὔως*.

reduplication of the root, with addition of the thematic vowel ε and ο. The vowel of reduplication is ι: γί-γν-ομαι (γίνομαι), μί-μν-ω, ἴσχω (for ἴσχω for σι-σχ-ω), ἵζω (from σι-zδω, Latin *sido*), τίκτω (from τί-τκ-ω). The ι of πίπτω is not clear, but is probably an instance of reduplication: πί-πτ-ω, full root πετ-. The full root of the other instances is seen in ἐ-γεν-όμην, μέν-ω, ἔχ-ω, √σεδ in ἕζομαι (for σεδ-ι̯ομαι), ἔ-τεκ-ον.

Other instances of reduplication are perhaps δίζε, answering to non-thematic δίζημαι, and ἰαύ-εις, Aor. ἄεσα for ἄϝεσα; cf. αὔξω and ἀέξω (Monro, *H. G.* § 34).

Other methods of reduplication, either of initial consonant with ε, or else the so-called Attic reduplication, are to be found in the Homeric reduplicated aorists, mostly causative in meaning: ἐκ-λέ-λαθον, κε-καδών, κε-χάροντο, ἀμ-πε-παλών, τε-ταγών, ἐξ-ήπ-αφε, ἤρ-αρε, ἤκ-αχε, ἕ-σποιτο, ἐ-πέ-φνομεν, κέ-κλετο, πε-πυθοίατο, τε-τάρπετο, λε-λαβέσθαι, πε-πίθοιμεν, πε-φιδέσθαι, πέ-φραδε, ἄλ-αλκε, τε-τύκοντο.

In ἔ-τε-τμε, ἔειπον the ε of the root has disappeared. The only reduplicated aorists in Attic are ἤγ-αγον and εἶπον. There is a difficulty in the explanation of ἔ-ειπον, εἶπον over against Sanskrit *á-vōc-am*, from the Indo-European √*u̯eq*. On Old Attic inscriptions εἶπον has the genuine diphthong ει (as distinguished from the ει of compensatory lengthening which was written ε), and with this agrees the Lesbian ϝείπην (Alcaeus). The Greek form answering to Sanskrit *á-vōc-am* (=*a-va-uc-am*) will be ἐ-ϝε-ϝπ-ον, the Indo-European form of which was *a-u̯e-u̯q-am*, where the *e* of the full √*u̯eq* has disappeared, and the form stands on the same footing as ἑσπέσθαι (=σε-σπ-εσθαι), in which we find the same weakened root syllable.

It is doubtful whether this class of reduplicated stems had in early Greek a present tense, for ἕσπεται (δ. 826) is disputed, and ἕζομαι (if accepted) can stand for σέδι̯ομαι rather than σε-zδ-ομαι. In Alexandrian times we find such presents as πέφνω, κέκλομαι.

Peculiar reduplications appear in the Homeric ἠρύκακεν and ἠνίπαπε.

Sixth Class.

In the sixth class the present stem consists of the root and the suffixes -ι̯ο-, -ι̯ε-, a common type in all Indo-European languages. The corresponding Sanskrit class is the fourth class of the grammarians, where the present stem is formed by the addition of *ya* to the root.

(1) The suffix is added on to a root ending in a guttural: ἀίσσω (αἶξ), πτύσσω (πτύχες), δράσσομαι (δραχμή), τάσσω (τάξις), etc.: νίζω from a root ending in a velar guttural (√*nig*ᵘ; cf. νίπ-τρον and χέρ-νιβ-α), σφάζω (σφαγή), στίζω (στίγμα), κρίζω, στάζω, κλώζω, etc.

(2) The suffix is added on to roots ending in a nasal, as in βαίνω (here the root originally ended in *m*), μαίνομαι, φαίνω, καίνω, and Lesb. κταίνω.

(3) The suffix is added on to a root ending in a liquid in ἅλλομαι, βάλλω, πάλλω, ἀσπαίρω, σκαίρω.

If αἴρω is from ἀείρω and ει is a genuine diphthong, then we should expect in Attic ᾄρω, just as ᾄδω for ἀείδω: if, on the other hand, ει is the result of compensatory lengthening (ἀειρω = ἀερι̯ω), then we should expect ᾱ̓ρω by contraction, just as τιμᾶν for τιμάειν. αἴρω is perhaps a parallel form to ἀείρω (= ἀϝεριω), and stands for ϝr̥-ι̯ω (without prothetic *a*) = ϝαρι̯ω = αἴρω.

All the above instances have the weak form of the root; so has Doric φθαίρω. The form ῥέζω is for ϝράζω, but has been assimilated to ἔρδω, which has the full root.

The ε degree of the full root is seen in κτείνω, ἀείρω, φθείρω (Lesb. κτέννω, φθέρρω, etc., cf. p. 184), στέλλω, τείρω, ἐγείρω, but whether the full root is original in this particular class of verbs must remain doubtful. It may have been extended from the fut. and aor. κτενῶ and ἔκτεννα, ἔκτεινα, or it may have been due to the analogy of such verbs as φέρω.

The similarity of σφάξω, ἔσφαξα to φράξω, ἔφραξα, led to the formation of the present σφάττω, like φράσσω, φράττω, side by side with σφάζω, although the root of σφάζω is σφαγ-, and of φράσσω, φρακ-. In the passive aorist the guttural media appears, as in ἐσφάγ-ην, ἐφράγ-ην (late), ἐπλήγ-ην, ἐτάγην, even when the presents are σφάττω, φράσσω, πλήσσω, τάσσω.

Perhaps the change from the tenuis *κ* to the media *γ* is due to the example of such forms as *ἐάγ-ην* from *ἄγ-νυμι*, *ἐλέγην* from *λέγω*, where the *γ* is an actual part of the present stem and verbal root.

Under this class of verbs come *δίω* and *δίομαι*, Sanskrit *dī́-yā-mi.* The forms *δίετε*, *δίεται*, *δίεσθαι*, in consequence of their association with the similar *ἵετε*, *ἵεται*, *ἵεσθαι*, led further to the formation of *ἐνδίεσαν*, *δίεμαι*, *δίενται*, upon the model of *ἵεσαν*, etc.

The present stem is in other instances composed of the reduplicated root with the suffixes *-ι̯ο*, *-ι̯ε*.

The vowel of the reduplication is *ι* in *τιταίνω* (=*τι-τη̥-ι̯ω*), *λιλαίομαι* (=*λι-λασ-ι̯ομαι*).

By other methods of reduplication we have *γαρ-γαίρω* (*γαρ-γαρι̯ω*), *μαρ-μαίρω*, *πορ-φύ̆ρω*, *μορ-μύ̆ρω*, *βαμ-βαίνω*, *παμ-φαίνω*, *δαι-δάλλω*, *παι-πάλλω*, *παι-φάσσω*, *ποι-φύσσω*, *ἀ-ίσσω* (for *ϝαι-ϝικι̯ω*). These forms mostly have an intensive signification. Some of them may be denominatives, as, for instance, *δαιδάλλω* may be from *δαίδαλος*.

Under the sixth class we may also reckon the denominatives, whose present stem is formed by the addition of the suffixes *-ι̯ο*, *-ι̯ε* to a nominal base. Thus *οἰκέομεν* is for *οἰκε-ι̯ο-μεν.*

The denominatives in *-αω*, *-εω*, *-ιω*, *-υω* seem to be the most ancient formations, while those in *-οω*, *-ευω* are newer. Examples are *τιμά-(ι̯)ω*, *φιλέ-(ι̯)ω*, *μηνί-(ι̯)ω*, *δακρύ-(ι̯)ω* of the earlier, and *χρυσό-(ι̯)ω*, *βασιλεύ-(ι̯)ω* of the later formation. We have already spoken (p. 404) of the contraction of *ει̯ε* to *η* in the Homeric *φορῆ-ναι*, *ἀλιτή-μενος* from verbs in *-εω*. The long *ā*, Ion. *η*, of the verbs in *-αω* is to be explained as a prehistoric contraction of *αι̯ε*, as, for instance, in the Homeric *συναντή-την*, *συλή-την*, *φοιτή-την.*

These forms must be considered in connexion with the Aeolic dialect where we find *κάλημι*, *φίλημι*, *ὄρημι*, the optat. *φιλείην*, the part. act. *φίλεις*, and midd. *φιλήμενος* (cf. p. 404): the question is, did these forms belong originally to the *-μι* conjugation or to the thematic conjugation? Brugmann

(*M. U.* i. 85) regards the inflexion of *φιλέω* as the older, while the Aeolic *φίλημι* is due to the analogy of such verbs as *ἄημι*, *δίζημαι*, and the aor. *ἔβλην*.

Comparing Aeolic *φίλη-μεν* with *ἄη-μεν*,
φίλη-ται with *ἄη-ται*,
φιλείην with *ἀείην*, *κιχείην*,
φιλῆναι with *ἀῆναι*,
φιλήμενος with *ἀήμενος*,
ἐδοκίμων with *ἔγνων*,
ἐγέλᾱν with *ἔδραν*, etc.,

we see that it was from such verbs in *-μι* as *ἄημι* that the new inflexion for the contracted verbs was introduced. Curtius (*Verb.* i. 352) long ago remarked the agreement between the Homeric *φοιτή-την*, *φορῆ-ναι*, *ἀλιτή-μενος*, and such forms as *κιχή-μεναι*, *ἀή-μεναι*. It is no great extension of this to explain the Aeolic *φιλήμενος*, etc., from the forms of *ἄημι*.

Another proof that we need not regard the Aeolic forms of the contracted verbs as original is to be found in the fact that other verbs not belonging to this class were drawn into the inflexion of verbs in *-μι*. Thus we find *οἴδημι*[1] for *οἶδα*, and here we have no doubt that *οἶδα* is the more original formation.

The Homeric forms *τιθήμενος*, *τιθήμεναι*, *δίδωθι* conform to the type of the inflexions *ἀήμε-ναι*, *ἀή-μενος*.

Other denominatives belonging to the sixth class are *τεκταίνω* for *τεκτη̥ί̯ω* from *τέκτων*, *θωρήσσω* from *θώρηξ*, *ἁρπάζω* from *ἅρπαξ*, *ἐλπίζω* from *ἐλπίς*, Epic *τελείω* for *τελεσ-ί̯ω* from *τέλος*.

In many cases the nominal stem does not justify the verbal derivatives. Thus from *ἄριστον* we have *ἀριστ-άω*, from *μάντις* *μαντεύομαι*, from *κέρδος* *κερδαίνω*.

The endings *-αζω*, *-ιζω* are especially luxuriant. These properly belong to derivative verbs from stems ending in a guttural or dental, but for all that we have such verbs as *δικ-άζω*, *νομ-ίζω*, *χαρ-ίζομαι*, which are derivatives from the stems of *δίκη*, *νόμος*, and *χάρις*. The probability is, that in the case of these verbs, as in the case of *μειλίσσω* beside *μείλιχο-ς*, *ἀγγέλλω* beside *ἄγγελο-ς*, *ἐχθαίρω* beside *ἐχθρό-ς*, the irregular result was brought about by the influence of the analogy of those verbs which were actually derived from nominal stems ending in a consonant, viz. *κηρύσσω*, *ποιμαίνω*, *ἀνάσσω*, *ἐλπίζω*, *μαστίζω*, etc. In part, too, the formations were influenced by those verbs which were not denominatives, such as *φράσσω*, *βαίνω*, *βάλλω*, *ἀσπαίρω*, *φράζω*, etc.

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[1] *οἶδα αἰολικῶς οἴδημι λέγεται*, *Et. Mag.* 618. 55, also Hesychius.

Occasionally we have doublets—

ἀγαπάω	*ἀγαπάζω*.
ἀνιάω	*ἀνιάζω*.
ἀτιμάω	*ἀτιμάζω*.
αἰνέω	*αἰνίζομαι*.
καλέω	*προκαλίζετο*.
ὁπλέω	*ὁπλίζω*, etc.

The *ι* of the verbs in *-ιζω* is probably due to the stems in *ι*, as for instance *ὑβρίζω* from *ὕβρις*, and this ending has been extended to all members of the class. But in the Homeric *ἀκηχέδαται*, *ῥιγεδ-ανός* we appear to have indications of a formation in *-εζω* for *-εδι̯ω*, e. g. **ἀχεζω* and **ῥιγεζω*. In that case *προκαλέσσατο* would be a more ancient form of the aor. than the form *προύκαλίσατο*, as pointing to a present *προκαλέζομαι*. (Cf. Monro *H. G.* p. 316.)

In considering irregular denominatives we must remember that the process was assisted by the fact that certain functions were associated with certain endings. This would explain why some denominatives did not follow the path prescribed by the nominal stem.

Thus the verbs in *-οω* are mainly derived from adjectival *O*-stems, and have a causative or factitive meaning, e. g. *γυμνόω*, *ἰσόω*, *κακόω*, *μονόω*, *ὁμοιόω*, *ὀρθόω*.

Some others, viz. *ὑπνόω*, *χολόω*, *πτερόω* come from substantives, but their meaning is the same.

Verbs in *-αω* come mainly from noun stems in *ā*, and usually denote the exercise of some activity or the existence of some state, viz. *ἀγαπάω*, *αὐδάω*, *βοάω*, *ἡβάω*, *νικάω*. Later formations which preserve the same sort of meaning are *ναυσιάω*, *ὠχριάω*, *κλαυσιάω*.

The verbs in -*εω* are in meaning much less definitely contrasted with the verbs in -*αω* than with the verbs in -*οω*. To judge from the Latin doublets

albare	*albēre*,
clarare	*clarēre*, etc.,

we may conjecture that the transitive meaning is more special to the *ā*-conjugation, the intransitive to the *ē*-conjugation. In Greek, at any rate, the verbs in -*εω* and -*ιζω* are mainly intransitive. They are also largely derived from abstract substantives of the *O*-declension, e. g. *αἶνος*, *ἆθλος*, *γάμος*, *κόσμος*.

We can thus see that as the several verbal endings expressed different functions, the process of derivation might become irregular. Thus, in spite of *γέφυρα*, we have *γεφυρόω* : on the other hand, from *λωβή*, *τελευτή*, we have *λωβάομαι*, *τελευτάω* (sometimes), with the causative meaning of the verbs in -*οω*. It may be in some instances that the *O*-stem from which the verb in -*οω* is derived has been lost, e. g. *κορυφοῦσθαι* might come from a *κόρυφος* existing side by side with *κορυφή*.

The starting-point of the verbs in -*ευω* is the noun stem in -*ευ*-. But few of the existing verbs in -*ευω* can be referred to such a stem. Thus there are noun stems in -*ευ*- answering to the verbs *ἀριστεύω*, *βασιλεύω*, but none answering to *ἀρχεύω*, *θηρεύω*, *βουλεύω*, *παιδεύω*, *πιστεύω*. The difficulty is lessened by observing that in Homer an *O*-stem is often altered into a *ευ*-stem in declension, as, for instance,

ἡνίοχος	but	*ἡνιοχῆα* and *ἡνιοχῆες*.
οὖρος	but	*οὐρήων*.
πομπός	but	*πομπῆες*.

Seeing, then, that *nomina agentis* in -*o*- might have a by-stem in -*ευ*-, it becomes easier to explain the occurrence of verbs in -*ευω* which can be referred to no corresponding noun stem in -*ευ*-. To explain *ἱκετεύω*, for instance, we must suppose *ἱκετευ*-, as well as the stem of *ἱκέτης*.

The meaning of verbs in -*ευω* was to conduct or behave oneself after the fashion of some person or other who was denoted by the noun with the stem in -*ευ*-. Thus *βασιλεύω* means to behave like a *βασιλεύς*. The need of verbs to express this meaning swelled the list of verbs in -*ευω*. In use they come nearest to the verbs in -*εω*, and this explains the constant interchange between the two classes, as, for instance, in *ζητεύω* and *ζητέω*, *οἰνοχοεύω* and *οἰνοχοέω*. (Cf. Curt. *Verb*, p. 252.)

Causatives.

With the sixth class we may take the verbs whose present stem is made up of a root with full degree and the suffixes -*ει̯ο*- and -*ει̯ε*-: their meaning is causative: they correspond to the Hindu tenth class with suffix -*áya*-[1]. Instances are *φοβ-έω* (beside *φέβομαι*), *ὀχέω*, *σοβέω*, *σοέω*, *τροπέω*, *φορέω*. Originally these verbs were distinguished from the similar denominatives by a difference of accentuation. In Greek there is no difference of accent and no distinction of form between the causatives and the denominatives, and so it seems best to rank them in the same class.

In Latin we can compare the denominative *albeo* with the causatives *moneo* and *noceo*.

Seventh Class.

The seventh class is composed of verbs whose present stem consists of the root with the suffixes -*το* and -*τε*.

It is open to doubt whether the verbs so formed should form a separate or whether they do not really belong to our sixth class, that is, where the present stem consists of the root and the suffixes -*ι̯ο*, -*ι̯ε*. There are the aorists *ἔβλασ-τον*, *ἤλιτον* (cf. *ἠλίθιος*), *ἥμαρτον*, *ἤμβροτον* Ep., and the Attic *ἀνύ-τω*. The verb *πέκτω* (Attic *πεκτεῖν*, Ar. *Av.* 714, Lat. *pecto*) is only known to us from the lexicographers. Apart from this instance we find in the present stem a labial, and in almost all certain cases that labial is *π*. In the case of such denominatives as *ἀστράπτω*, *χαλέπτω* we have no other explanation of their origin than to assume the form *χαλεπ-ι̯ω*, *ἀστραπ-ι̯ω*. Is there any other explanation for such a verb as *τύπτω*? We may conclude that where the root does actually end in *π* the suffix was -*ι̯ο*, viz. *τυπι̯ω*, *σκαπι̯ω* = *τύπτω*, *σκάπτω*. But where the root ended originally in a guttural, as is the case with *πέπτω*, *√peq*, cf. Lat. *coquo*, with the Homeric *ἐνίπτω* beside *ἐνίσσω*, and *νίπτω* beside *νίζω*, cf. *χέρ-νιβ-α* (with the root ending in the velar guttural *g*), in these verbs we cannot suppose suffixes *-ι̯ο*, *-ι̯ε* added to the root. Nor will the explanation which is satisfactory for *τύπτω* hold in cases where the root ends in *β* or *φ*, as in *βλάπτω* beside *βλάβη*, *καλύπτω* beside *καλύβη*, *βάπτω* beside *βαφή*, *κρύπτω* beside *κρύφα*, etc.

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[1] Whitney (*Sk. Gr.* § 607) regards this as a derivative conjugation and not as a separate present-system.

It is possible that, though *κρύπτω*, *βάπτω* cannot be explained by *κρυφ-ι̯ω*, *βαφ-ι̯ω*, or *βλάπτω* by *βλαβι̯ω*, all these presents are new formations upon the analogy of *τύπτω* and those verbs whose roots ended in *π*. Just as the similarity of *ἔσφαξα* from *σφάζω* and *ἔφραξα* from *φράττω* led to the formation of a later *σφάττω*, so the similarity of *ἔβλαψα*, *ἔκρυψα*, and *ἔτυψα* (N. 529), may have brought about a corresponding similarity in the formation of the presents. In *πέπτω*, *ἐνίπτω*, *νίπτω* beside *πέσσω*, *ἐνίσσω*, *νίζω*, we cannot assume any such analogy, but must rest content with the addition of the suffixes *-το*, *-τε*.

The verb *σκέπ-τομαι* does not come from **σπεκ-το-μαι*, but from *σπεκ-ι̯ομαι* (from which *σκεπ-ι̯ομαι*), Lat. *spec-io*, Sk. *páçyāmi*. The strange metathesis of *π* and *κ* may perhaps be due to the analogy of the root *σκοϝ-* in *(θυο)σκόϝος*, which has a similar meaning, and which appears without the *σ* in *Λαο-κό-ων* and the Lat. *cav-eo*, *cau-tus*.

Eighth Class.

In the eighth class, the present stem is made up of the verb stem with the root in the low degree and the suffixes *-σκο-*, *-σκε-*. E.g. *βάσκω*, I.-E. *g̑m̥-sk̑ó*, *χάσκω*, *φάσκω*, *βόσκω*. From these verbs the suffix was extended to polysyllabic verbal stems, *γηρᾰ́-σκω*, *ἡβᾰ́-σκω*, *γενειᾰ́-σκω*, *ἱλᾰ́-σκομαι*, *μεθῠ́-σκω*, *κορέ-σκω*, *ἀρέ-σκω*. Beside these we may set the Ionic iterative preterites, *φεύγεσκε*, *ἐρίζεσκον*, *αὐδήσασκε*, *φάνεσκε*. Like *φά-σκον* (*φημί*) was formed *ἵστασκον* (*ἵστημι*), *καλέσκετο* like *κορέσκω* and *ῥίπτασκον* (*ῥιπτάζω*), just as *γενειάσκω* (*γενειάζω*), etc. These iteratives differ from the presents in having distinctly the notion of repeated action and in being confined to the past time. Even ἔφασκον has sometimes an iterative meaning (*θ*. 565), and the present φάσκω does not occur in Homer.

In Latin as in Greek we can distinguish in the same way between the regular inceptives, viz. *liquesco*, *puerasco*, and the presents, such as *pasco*, *proficiscor*, where the inceptive meaning is scarcely perceptible.

The verbal stem with a long vowel is found in γι-γνώ-σκω, *gnō-sco*, βιβρώσκω, τιτρώσκω, etc.

In θνῄσκω, βλώσκω we may still suppose the weak degree of the root, as the long vowel represents an originally long nasal sonant. Thus θn̥̄σκω and βl̥̄σκω, just as στρωτός for στr̥̄τος (cf. p. 234).

Under this class are comprised those stems which, like the last, add on the suffixes -σκο, -σκε, but in which the verb stem is also reduplicated.

1. Where ι is the vowel of reduplication, as in δι-δάσκω, τι-τύσκομαι, γι-γνώσκω, μι-μνῄσκω, δι-δράσκω, κί-κλησκεν, πί-φαυσκε.

2. With other modes of reduplication, ἐ-ίσκω, δειδίσκομαι, and with insertion of ι in the verbal stem, ἀπαφ-ί-σκει, ἀρ-άρ-ι-σκε.

A final consonant is lost before σκ in δι-δασκέ-μεν for δι-δαχ-σκε-, ἐ-ίσκω (cf. ἴκ-ελος) for ϝε-ϝικ-σκω, τι-τύσκε-το (τυκ- or τυχ-), and perhaps also μίσγον for μιγ-σκον, πάσχω for παθ-σκω.

Homeric δειδίσκομαι, Att. δεδίσκομαι (Ar. *Lys*. 564), is for δε-δϝικ-σκο-μαι, cf. δείδοικα, δέδοικα, for δέδϝοικα. In δειδίσσεσθαι, δεδίττεσθαι, κι̯ has passed to σσ and ττ.

The termination -ισκω comes in Homeric ἀπαφίσκω, ἀραρίσκω, and in εὑρίσκω, as well as in later ἀλ-ίσκομαι, ἀνᾱλίσκω, στέρισκω. It is even added on to a vowel stem in χρηΐσκομαι (Hdt. 3. 117). The origin of this ι is unexplained.

The Ionic-Attic θνῄσκω, Aeol. θναίσκω, θρῴσκω, and μιμνῄσκω (cf. Curt. *Verb*, 190), have followed the analogy of verbs in -ισκω, viz. εὑρ-ίσκω and added an iota.

Ninth Class.

The ninth or nasal class.—In these verbs the present stem is made up of the root with suffixes *-νο* and *-νε*, or of the root sometimes nasalised and suffixes *-ανο-*, *-ανε-*.

δάκ-νω *ληθ-άνω* *λανθ-άνω* *λιμπ-άνω*.

For the nasalisation of the root we may compare the seventh class of the Hindu grammarians.

The presents in *-νω* may probably be due to transference into the thematic conjugation of non-thematic verbs which added on the suffix *-να* to the root (fourth class). Analogies exist in other languages, but it is possible that they may be the separate growths within the limits of the several languages.

In the verbs in *-ανω*, if the root syllable is short, a nasal is inserted; otherwise there is no nasal, and the root should be full. Compare *λανθ-άνω* and *ληθ-άνω*.

Weak root with nasal appears in *ἀνδ-άνω*, *λαγχ-άνω*, *χανδ-άνω*, *πυνθ-άνομαι*, *τυγχ-άνω*, *λαμβ-άνω*, etc.

Without nasal in the root there are *ἁμαρτάνω* beside *ἤ̆μαρτον*, *κευθάνω* beside *κεύθω*, and post-Homeric *αἰσθάνομαι*, *βλαστάνω*, *ὀλισθάνω*, etc.

With reduplication, *-ανο-* appears in *πιμ-πλάνεται*, *ἰσχάνω*, *ἰζάνω*.

In other verbs of the nasal class the present stem is composed of the weak root with suffixes *-νϜο*, *-νϜε*.

Homeric *φθάνω*, *φθίνω*, *ἄ̄νω* (but only in Arsis), Attic *τί̆νω*, *φθά̆νω*, *φθῐ́νω*, for original *φθανϜω*, *φθινϜω*, *ἀνϜω*, *τινϜω*.

Beside *ἄ̆νϜω* we may set *ἤ̆νυτο* Sk. *sa-nṓ-mi*.
φθίνϜω „ „ *φθι-νύ-θω*.
τίνϜω „ „ *τι-νύ-μεναι*,

ὀρίνω, Lesb. *ὀρίννω*, points to *ὀρίνϜω*, and the long vowel of Epic *δῡ́νω*, *θῡ́νω* to *δύνϜω*, *θύνϜω*. For the loss of the *Ϝ* without compensatory lengthening in Attic *φθᾰ́νω*, etc., we may compare *ξένος*, *μόνος*, *κόρη*, *ὅλος*, etc.

To this class belong Homeric *κιχάνω*, Att. *κιγχάνω*, a new formation with nasalisation of the first syllable, side by side with aor. *κιχῆναι*, which belongs to the second class.

Homeric *ἱκάνω* (=*ἱκανϜω*) is also a new formation after the model of *φθάνω*, *ἄνω*.

Under the third class we have spoken of the transference of verbs in *-νυμι* into the thematic conjugation *-νυω*, as, for instance, *ἥνυτο* but *ἀνύω*, and under this tenth class comes *ἄνω* for *ἀνϝω*, pointing to an original *-nu̯o*. Beside verbs like *ἀνύ-ω* we have verbs with the fuller suffix *-νευ-*, which passes to *-νεϝω*, *-νεω*, as in *κινέω* (for *κινεϝω*) beside *κίνυται*, *ἀγινέω*, and *δινέω*, and these verbs are then conjugated like the ordinary contracted verbs in *-εω* which come from *-ει̯ω*.

The Perfect.

The stem of the Perfect appears in Greek in all the moods of the active and middle voice, and also in the augmented Pluperfect. Its characteristics are reduplication, the person endings, and a special root form with a distinction into strong and weak varieties; but these characteristics have often been obscured by later formations in the history of the Greek language.

Reduplication.

In stems which have an initial consonant the vowel of the reduplication is *ε*, as in *γέ-γονα*, *δέ-δορκα*, *λέ-λοιπα*, *πε-φύᾱσι*, etc. The origin of this *ε* is to be referred to the Indo-European primitive language, and in preserving it the languages of Europe have remained truer to the original than the Asiatic languages. In Sanskrit, where the root contains *i* or *u*, the vowel of reduplication is *i* or *u*. Latin also shows a reduplication with assimilation to the vowel of the root in *momordi*, *poposci*; older *memordi*, *peposci* (cf. p. 455).

It has been supposed that *η* sometimes appears as the vowel of the reduplicated syllable, but there is no sure instance of this. It is possible that *ἑώρακα* is by metathesis of quantity for *ἡόρακα*, but the correct form is *ἑόρακα*. So too *ἑάλωκα* (not *ἑᾱλωκα*) and *εἴργασμαι* (imperf. *ἠργαζόμην*) are the correct forms of those perfects. From *εἰκάζω* the aor. is *ᾔκασα*, the perfect *εἴκασμαι*. Wherever in such cases the MSS. show *ει* for the aorist and *εω* or *η* for the perfect we have the result of later confusion.

(1) In roots beginning with a single consonant, the syllable of reduplication consists of this consonant with *ε*, as in *δέδορκα*: or where the root begins with an aspirate, of the corresponding tenuis with *ε*, as in *τέθεικα*.

(2) Where the root had two initial consonants, the first consonant with ε was the syllable of reduplication if the consonants were a mute and a nasal or liquid, as in *γέγραπται*, *τέθνηκα*. To this *ἔγνωκα* is a constant exception, and *ἐβλάστηκα* stands beside *βεβλάστηκα*.

In other cases of two consonants it was usual to prefix ε only, as in *ἔκτημαι* (usually *κέκτημαι*), *ἐζευγμένος*, *ἔψευσμαι*, but regularly *μέμνημαι*. The prefix of ε alone is due perhaps to the analogy of roots beginning with a spirant which disappeared. Thus *σε-στηκα* becomes *ἕσ-τηκα*, *σε-σρυηκα* becomes *ἐρρύηκα*, *ϝεϝρωγα* becomes *ἔρρωγα*.

(3) Where the root began with a single spirant, we have in Homer ε for reduplication, as in *ἐ-ελμένος* for *ϝε-ϝελμένος*, and so too in *ἔοικα* and *ἔολπα*. In Attic we have the ε in *ἑάλωκα*, *ἔοικα*, *ἀνέῳγμαι*.

ἑᾱδότα is from √*σϝαδ*- with two initial spirants, *εἴωθα* and Ionic *ἔωθα* from √*σϝεθ*.

(4) An irregular *ει*- appears in *εἴληφα*, *εἴληχα*, which resemble *εἴρηκα* from √*ϝερ*. The regular forms appear in the Ionic *λελάβηκα*, *λέλογχα*.

(5) Where the root began with a vowel we find the reduplication represented either by a long vowel, as in *ἤσκηται*, or else by the so-called Attic reduplication. The long vowel arose out of a coalition between the ε of the reduplication and the initial vowel of the root, and is therefore similar in form to the augment of the past tenses of roots beginning with a vowel. Thus from *ἄγω* we have *ἦχα*, *ἦγμαι*. Other instances are *ἧμαι*, *ἧμμαι* and Epic *ᾐσχυμμένος*.

The Attic reduplication is especially common in Homer and consists in taking the initial vowel of the root with the following consonant as a syllable of reduplication, e.g. *ἀγ-αγεῖν*. It was originally confined to a few forms and was afterwards extended. Thus in Homer *ἐδηδώς* but Sanskrit *ā́da*, Latin *ēdi*. It is regular where the root vowel is short, as in *ἀραρυῖα*, *ἀκαχμένος*. In Attic we have among others *ἀκήκοα*, *ἐδήδοκα*, *ἐλήλεγμαι*, *ἐλήλυθα*, *ὄλωλα*, and *ἐνήνοχα*.

In some Homeric forms the reduplication has disappeared

(Monro, *H. G.* § 23), viz. *δέχαται, ἔρχαται, ἕσσαι, ἐπ-ώχατο.* In *οἶδα* (=*ϝοιδα*), Sanskrit *véda,* there seems to be found no trace of reduplication.

Stem variation.

We now come to another characteristic of the perfect, viz. stem variation.

In the indicat. the full form appears in the singular of the active, the weak elsewhere. Thus:—

οἶδα : *ἴδμεν*. Sanskrit *véda* : *vidmá*. Gothic *vait* : *vitum*.
ἔοικα : *ἐίκτην* : *ἤικτο*.
δείδω(=*δέδϝοι̯α*) : *δείδιμεν* (=*δέδϝιμεν*).
-εφθορα : *ἔφθαρμαι*.
τέτροφα : *τέθραμμαι*.
γέγονα : *γέγαμεν*.
μέμονα : *μέματον*.

Compare Epic *ειλήλουθα*, but instead of *ειλήλυθμεν* for the plural, Homer has *ειλήλουθμεν*, and in Attic we have throughout *ἐλήλυθα*.

Also *πέπονθα* : *πέπασθε* 2 plur. (for *πεπαθ-τε*). *πέπασθε* is the reading of Aristarchus in Γ. 99, instead of the vulgate *πέποσθε*.

The regular *o*-degree of the root appears in the Homeric *λέλογχα, δέδορκα, ἀν-ήνοθεν, ἔμμορε* (O 189), *διέφθορα* (O. 128).

In Attic we have *ἐν-ήνοχα, κέκλοφα, τέτροφα, ἐγρήγορα*, etc.

The weak without the corresponding strong degree appears in the Homeric forms *πέφαται* (cf. *φόν-ος*), *εἵμαρται, πεπαρμένος, τέταμαι.*

We have given instances of what remains of the old stem variation of the perfect tense. It remains to consider the alterations in this system made by new formations.

New formations.

Thus the strong stem has taken the place of the weak in the forms *ἐοίκαμεν*, poet. *ἔοιγμεν*, Epic *ειλήλουθμεν, γεγόναμεν* (Aesch. *Sept.* 142). Conversely the weak has taken the place of the strong stem in *δέδια*, Epic. *δείδια* (for *δεδοι̯α*) and Attic *ἐλήλυθα* (for *ειλήλουθα*).

The *ε*-degree took the place of the regular *o*-degree, in *πέφευγα*, perhaps instead of *πεφουγα* (cf. *ειλήλουθα*) with plural *πέφυγμεν*, cf. Epic *πεφυγμένος*. As a matter of fact the perfect in *ου* appears in Greek only as an antiquity to be found here and there.

Again we have *πέπεισται* (not **πεπισται*, cf. *ἐπέπιθμεν*), *λέλειπται* where the vowel *ε* may be due to the analogy of the present stem.

Sometimes the appearance of *ε* in the root is due to the fact that without it the combination would be unpronounceable. Thus from a perfect *τέτοκα* we could have no plural **τετκμεν*. In such cases pronunciation is rendered possible by the insertion of *ε*. This is the probable explanation of such forms as *συνειλεχώς* (*εἴλοχα*) and *ἀν-ηνεχυῖαν* (*ἐν-ήνοχα*) given by Hesychius (cf. De Sauss. p. 71, n). Such an explanation will perhaps hold in the case of *ἐσ-μέν* as compared with Sanskrit *s-más*; the prothetic *ε* in Greek may be for the sake of ease of pronunciation.

A high degree of the root appears in the perfects *ἔρρωγα*, *ἀφέωκα* (Herodian), *ἀνέωνται* (Hdt. 2. 165 Bekk., Dind.); *ἀφέωνται* (*N. T.*), *ἀνεωσθαι* (*Tabl. Heracl.*) which belong to the *ē*-series of Ablaut.

The perfects *λέλᾱθα* : *λέλᾰσται*, *ἕστᾱκα* : *ἕστᾰμεν* belong to the *ā*-series of Ablaut, but there are no traces of the high degree in *ω* which might have been expected, as is found for instance in *φω-νή* beside *φᾱ-μί* (*φημί*).

The perfects *μέμνη-μαι* (*μέμον-α*), *δέδμη-μαι* (*δαμ-*), *κέκλη-μαι* (*καλ-*), *κεκμηώς* (*καμ-*) stand in the same relation to the perfects with weak degree of root, e.g. *τέτα-μαι*, *πεφυγ-μένος*, as presents like *γιγνώ-σκω* to the weak *βᾰ́-σκω*, *τιτῠ́-σκομαι*.

Perf. subj. If we are to judge from the Homeric conjunctive *εἴδομεν* beside the indic. *οἶδα*, the *ε* degree of the root was the proper form in the conjunctive mood of the perfect.

Perf. imperat. In the imperative the weak degree of the root was appropriate, as in *δείδιθι* for *δεδϝιθι*, *τέτλαθι*, *μεμάτω*, Latin *memento*.

Perf. part. So in the participle, e.g. *δεδι-ώς*, *πεπαθ-υῖα*, *πεφυγ-μένος*, *ἑστᾰ-ώς*. Such forms then as *πεπονθώς* and *ἑστηώς*, with the full root are new formations.

The long vowel of the stem in the masc. of the participle seems to be due to the *ϝ* of the ending. Just as in Homer *φθάνω* is for *φθάνϝω* or *ἀδεής* for *ἀδϝεής*, so *ἑᾱδότα* is for *ἑαδϝότα*. In the Feminine there is no such reason for lengthening:—

ϝιδϝώς = ϝῑδώς = εἰδώς Feminine *ἰδυῖα*.
ἀραρϝώς = ἀρᾱρώς, ἀρηρώς „ *ἀρᾰρυῖα*.
τεθαλϝώς = τεθηλώς „ *τεθᾰλυῖα*.

From *μέμονα* we have the double *μεμᾱώς* and *μεμᾰώς* (Epic).

The forms *τετληυῖα, πεπληγυῖα, τετρηχυῖα*, show how early the strong form intruded into the fem. from the masc.

In P. 5 we have *οὐ πρὶν εἰδυῖα τόκοιο*, with the full root in the nom. fem.

Addition of endings in the perfect.

The person endings in the perfect were originally directly added to the stem without the intervention of a vowel. Thus we have *ἴδ-μεν* and in the pluperfect, *ἐπέπιθ-μεν* and like these we ought to have **πεφυγ-μεν*, **πεπαθ-μεν*, **δεδρακ-μεν* as the plurals of **πεφουγα, πέπονθα*, and *δέδορκα*.

In the same way with the perfect and pluperfect middle there was originally no extension of the stem by a vowel *a*, as we can see from such instances as *πέπῠσμαι, τετῠγμένος, πεφῠγμένος, τέθραμμαι*, and *ἀληλιμμένος*, in all of which we have the weak form of the root. Where we have a high degree of the root, as in *λελειμμένος, ἐζευγ-μένος*, the ending is still added immediately to the stem.

In post-Homeric Greek the vowel *a* which appears in the sing. act. was extended to the plural as well.

In such instances as *γέγα-μεν, μέμα-μεν, τέτλα-μεν*, the vowel belongs to the root and represents the nasal and liquid sonants. In the later *γεγόν-α-μεν, πεποίθ-α-μεν* the *a* is an extension of the stem, as it is throughout the tense in the so-called aspirated perfects, such as *πέπραχα*, which are post-Homeric, and in the perfects in *-κα* of which there are few in Homer.

Answering to this *a*, there continually shows itself in Sanskrit a connecting *i*, between the stem and the termination of the perfect.

In such a case however as *ἕσταμεν*, Sk. *tasthimá*, it is doubtful whether we are to divide the elements *ἕ-στ-αμεν*, *ta-sth-imá* or *ἕ-στα-μεν*, *ta-sthi-má*; which, that is, of the two weak degrees of the root, *στᾰ* or *στ*, is represented in this word. Such a combination as *ἕστ-μεν* was inadmissible, and so we may suppose that the vowel of the ending in *ἕστηκα*, *ἕστηκας*, was inserted between the weak stem and the ending. The choice of *α* was aided by the analogy of the weak aorist. In the singular, *τέτοκα* was inflected like *ἔτεξα*, and so in the plural we have *τετόκαμεν* like *ἐτέξαμεν*.

The 2nd sing. act. of the perfect in *-ας*, as in *ἄνωγας*, *δείδιας*, *ἔοικας*, etc., is Homeric as well as Attic. We have the ending *-θα* in *οἶσ-θα*, *ἦσ-θα*.

Beside the regular *εἷμαι*, *γεγευμένος*, etc., in which *σμ* according to rule has been simplified to *μ*, we have numerous irregularities such as *ἠμφίεσμαι*, *τετελεσμένος*, *ἐζώσμεθα*, due to the analogy of the 3rd pers. sing. indic. Conversely *κάθηται* (for *καθησται*) is due to the analogy of the first pers. *ἧμαι*.

We have already spoken of the apparent assibilation of δ, τ, θ before μ in the perf. midd. (cf. p. 196). The forms *πέπυσμαι*, *λελάσμεθα*, *κεκασμένος*, etc., are not due to a change of *θμ*, *δμ* into *σμ* but follow the analogy of *πέπυσται*, *λέλασται*, *κέκασται*. So too *ἴσ-μεν* for *ἴδ-μεν* has followed the analogy of *ἴσ-τε*.

Third Plural. The ending of the third pl. act. was *-αντι* (cf. p. 379).

The root of *τεθνᾶσι* appears in the full form in *θείνω* (√*θεν-*), aor. *ἔθανον* (n̥), fut. *θανοῦμαι*.

The true perfect should have been, not *τέθνᾱκα* but **τεθᾱκα*, and the plural **τεθαμεν*, **τεθατε*. But the weak stem *τεθα-* before a vowel became *τεθν-* as in *τεθν-ᾶσι*, and this form has been extended beyond its proper limits. Hence we get *τέθνᾱκα*, and further a pres. *θνᾱ́σκω* (*θνῄσκω*) instead of **θᾱσκω*.

In *οἶδα* we should notice the 3rd pl. *ἴσᾱσι*, sometimes in Homer *ῐ̓σασι*, where the *σ* seems due to the analogy of the 3rd pl. pluperf. *ἴσαν*, *ἴσσαν*, influenced too by the *σ* of *ἴστε*, *ἴστον*. In Doric is found *ἴσαντι* like *ἵσταντι*, whence rose the *ἴσᾱμι*, *ἴσᾱτι*, *ἴσᾰμεν* of Theocritus.

With *σ* like *ἴσασι* we have also the poet. 3rd pl. *εἴξᾱσι* for *εἴκᾱσι*. *ἐοίκᾱσι* is the Attic form.

Very frequently we have a transference from the perfect to the present tense formation, as in the *ἀνώγει*, *ἤνωγον* of Homer beside the perfect *ἄνωγα*, *ἐγέγωνε* and *γεγωνέμεν* beside *γέγωνα*, *ἐπέπληγον*, *πεπληγέμεν* beside *πέπληγα*, *ἐμέμηκον* beside *μεμηκώς*, as well as such a hybrid form as *κεκλήγοντες* (Π. 430).

Other instances are *μέμβλεται*, *ἥκω* for *ἧκα*, Sanskrit *ā́ça*, *κεκράγετε* beside the older *κέκραχθι*, and the infin. *γεγᾱ́κειν* in Pindar (*O.* 6. 83).

Aspirated Perfects. The forms *πέπλεχα* √*πλεκ-*, *κέκλοφα* √*κλεπ*, *ἦχα* √*ἀγ* are new formations. This characterization of the perfect is almost exclusively Attic. In Homer we find the plurals *δειδέχαται*, *ἔρχαται*, *ὀρωρέχαται*, *τετράφατο* (*τρέπω*), with an aspirate before the ending, but no aspirated active form. In Herodotus we have *εἰλίχατο*, *ἐσεσάχατο*, *ἐτετάχατο*, etc., (cf. p. 112), but in the active the single instance *ἐπεπόμφεε* (1. 85). One instance only of the aspirated active perfect is to be found in the tragedians, viz. *ἀνατέτροφας* (Soph. *Trach.* 1009). In Thucydides also *πέπομφα* is the only instance. In succeeding writers these perfects begin to be numerous.

Now in such forms of the perfect as *τέτριφθε*, *τετρίφθαι*, *τέταχθε*, the aspiration, though only graphic, is according to rule (cf. p. 193). Apart from these forms, roughly speaking, we may say that up till the period of the later Attic writers, aspiration was confined to guttural and labial stems in the 3rd pl. of the perf. midd. No stem ending in a dental was aspirated, e. g. *ἐρηρέδαται*, *ἐσκευάδατο*.

From the 3rd pl. midd. aspiration passed later on to the active voice. Thus:—

ἐτετάχατο (Hdt. 8. 85)	Attic *τέταχα*.
ἐπι-τετράφαται, Epic	Attic *τέτροφα*.
τετρίφαται (Hdt. 2. 93)	Attic *τέτριφα*.

From these the aspiration was extended to active forms to which there was no corresponding aspiration of the 3rd pl. middle.

We cannot be certain how the aspiration arose in the 3rd plural of the perf. midd. The termination cannot be the reason, as, if so, there is no reason why the aspiration should be confined to guttural and labial stems. It is true, as J. Schmidt points out (*K. Z.* xxvii. 311), that whereas in the guttural and labial stems aspiration is regular in such forms as *τέταχθε*, *τέτριφθε*, and in the infin. midd., there is no such aspiration in the corresponding forms of dental stems. The dental disappears and we have e. g. *πεφράσθαι*. The aspiration of the guttural in *τέταχθε* may have furnished an analogy for the aspiration of *τετάχαται*. The same analogy does not exist in the case of *ἐσκεύασθε* beside *ἐσκευάδατο*.

The Perfect in -*κα*. We now have to consider the perfects in -*κα*. Whatever the origin of this formation, as an extensive class, it is peculiar to Greek. In a note on p. 18 of the *Homeric Grammar*, Monro says that these perfects may be regarded as having been formed in the ordinary way from stems in which a root has been extended by a suffixed -*κ*, as for instance in *ὀλέ-κ-ω*, *ἐρύ-κ-ω*, *δειδίσσομαι* for *δεδϝικ-ι̯ομαι*. Thus *ὀλώλεκα* would be the regular perfect of *ὀλέκω*, and *δείδοικα* would answer to the short stem *δϝικ-*. This is the explanation where we can point out an actually existing stem in *κ*. The formation was afterwards extended, and appears even where there is no such stem in *κ*. Thus *βέβηκα* of *βαίνω* answers to a possible present **βήκ-ω* with which we may compare *βάκτρον*, and *ἕστηκα* to *στήκω*.

Without this extended stem the inflexions of these perfects would be unlike other perfects, as for instance if they appeared in the singular as e. g. *βέβω*, *βέβησθα*, *βέβη* (cf. also Curt. *Verb*, 411).

The same account will also apply to the aorists in -*κα*, such as *ἔθηκα* (cf. *θήκη*) and *ἔδωκα*, Sk. *ádāç-am*.

In the perfect *κα* came to be regarded as a tense-suffix. At first it was added on to the strong stem, as in *δείδοι-κα*, formed out of *δε-δϝοι̯α* (=*δείδω*). Its addition to the weak stem, as in *τέθε-κα* (Doric Inscription), was later. This perfect in -*κα* is not common in Homer and we only have it with vowel stems. We have *βέβηκα, ἕστηκα, δέδῡκε, μέμῡκε, κέκμηκας, μέμβλωκε*, and some others from derived stems, *ἀδηκότες, βεβίηκε, δεδάηκε*, etc. In Ionic and Attic the formation was extended to all derived verbs and to such perfects as *ἔφθαρκα, ἔσταλκα, ἥρπακα, τεθαύμακα, κεκόμικα*, and many more.

Osthoff (*Z. G. d. P.* p. 324 sqq.) has given an account of the perfect in -*κα* which does not seem plausible, viz. that it arose out of the addition of enclitic *κε* to the stem, and he compares the addition of the particle *u*, as he supposes, in Sanskrit *dadhā-u* (cf. p. 358). The Homeric *κεν* or *κε* appears as *κα* in Doric. Osthoff has to admit that there is no instance of the use of the perfect in Homer with *κεν*, any more than with *ἄν*. This he attributes to accident. He discerns *κεν* in *ἕνεκεν*, in *ὅκα* and *πόκα*, and asserts that in Homer the meaning of *κεν* is expressed by the German '*wol.*' '*Tantae molis erat*' he says at the end of his lengthy proof, but few in this case will be ready to admit that his arguments are convincing.

Sigmatic Aorist.

In the Sigmatic aorist the endings were directly added to the stem. The tense therefore ranks as a non-thematic formation. Originally the strong stem was employed in the singular of the active, the weak in the plural active and in the middle voice. Thus Sk. *árāutsam*, act., but *árutsi*, midd. In Greek there are few traces of this stem variation.

From the aor. of *δείκνῡμι* we can see how the endings were added. Thus in *ἔδεικ-σ-α, ἔδεικ-σ-αν* the endings represent I.-E. *-s-m̥*, *-s-ń̥t*.

Curtius gives eighteen formations as strong aorists, but only a few of these, such as *γέντο, ἔκταν*, and perhaps *ἆλτο* (*ἅλτο*), and *ὦρτο*, need rank as non-sigmatic. The remainder are in reality sigmatic, since from the time of Homer we find parallel sigmatic forms, and in no case are they without sigma before a suffix beginning with a vowel.

Thus beside	δέκτο	there are	δέξο and δέξατο.
,,	λέκτο	,,	λέξο and λέξατο.
,,	ἐλέλικτο	(for ἐϝελικτο, according to Cobet)	ἐλελιξάμενος (for ἐϝελιξ-).
,,	πῆκτο	there is	πῆξαι.

From the root *σϝᾱδ-* we have *ἅσμενος*, with the weak degree of root. *ἅσμενος* cannot be explained, as Curtius thinks, by *σϝαδ-μενος*, because, as we have seen (p. 196), the notion that the dentals pass into σ before μ is a mistake. We must refer *ἄσ-μενος* to *ἥσ-ατο*. *ἄσμενος* therefore is related to *ἥσατο* and post-Homeric *ἧσα* (?), as *πάλτο* is to *πῆλε* (with strong degree of root). Those aorists which have lost their σ according to regular phonetic laws appear to employ only the bare root as their tense stem, and so resemble non-thematic strong aorists rather than the weak sigmatic tense.

The next question concerns the *α* of the sigmatic aorist. In the 1st singular it represents an original *-m̥*, Sk. *-am*. Monro (*H. G.* App. A. 310) holds that the vowel was extended to the other persons by analogy. Thus the original inflexion ran

ἔδεικ-σ-ᾰ, ἔδεικ-ς, ἔδεικ-σ-(τ), ἔδικ-σ-μεν.

To get rid of these blocks of consonants the *α* of the 1st sing. was extended by analogy, and so we get *ἔδειξας*, *ἐδείξαμεν*, *ἐδείξατο*, *ἐδειξάμην*. The stem was regarded no longer as *δεικ-σ-*, but as *δειξα-*, and as such was extended to the opt. *δείξα-ιμι*, the partic. *δείξα-ς*, and the imperative. For this extension we may compare what has been already said about the perfect (p. 421).

This explanation of Monro's is simpler than that of Brugmann, who regards the *α* of the aorist stem as a development from the nasal of the ending in *ἔδεικ-σ-μεν* = *ἔδεικσ-αμεν*, and from this extended to *ἔδειξας*, *ἐδείξατε*, *ἐδείξω*, etc. Both explanations agree, however, in the important point that the *α* of the stem is a development to lighten a block of consonants, and that it was extended by analogy over the whole of the sigmatic aorist paradigm.

The 3rd sing. *ἔδειξε* is for an older *ἔδεικ-σ-τ*. The *ε* of the Greek ending is not original. It may be due to that assimilation between the aorist and the perfect tense system, which we have noticed in other inflexions. In the 2nd sing., for instance, *οἶσθα*, *ἦσθα* give the true perfect ending, but from *λέλοιπα* we have *λέλοιπας* like *ἔδειξας*. So perhaps like *οἶδε* we have *ἔδειξε*. On the other hand we can explain *ἔδειξε* by comparison with the Homeric thematic formations with σ, such as *δύσετο*, *βήσετο*, *ἶξον*.

In a comparison of the sigmatic aorist in Sanskrit and in Greek, it should be noted that Sanskrit has more variety in this formation. Thus *s*, *iş*, *siş* and *sa* are all employed as tense-signs of the sigmatic aorist (Whitney, *Sk. Gr.* § 877).

From √ *rudh* we have the aorist *árāut-sam*, *árāut-sīs*, *árāut-sīt*, where *s* is the tense-sign.

From √ *budh* we have the aorist *ábodh-işam*, *ábodhīs*, *ábodhīt*, where *iş* is the tense-sign. We may compare Gk. *ᾔδη* (for *ᾔδεσα* = *ἠϝειδεσα*) with Sk. *á-vediş-am* (cf. p. 428).

From √ *yā* we have the aorist *ayā-sişam* where *siş* is the tense-sign and from √ *diç* the aorist *ádik-şam*, *ádik-şas*, *ádik-şat*, where *sa* is the tense-sign. This last does not correspond to *ἔδειξα*, because it is thematic and because in Sanskrit we have the reduced, in Greek the full form of the root.

Addition of σ.

σ is added on directly in *ἔμνη-σα*, *ἔστη-σα*, *ἐδεικ-σα*, *ἔζεσ-σα* (*ἔζεσα*).

In Homer we find the aorists *ἔλσαι*, *κέρσαι*, *κέλσαι*, *κύρσαι*, etc.; but in Attic the new formations *ἔκειρα*, *ὤκειλα*, modelled upon *ἔκτεινα*, *ἔνειμα*, where σ has disappeared, and the preceding short vowel is lengthened in compensation.

Stem variation.

While the aorists from such stems as *μνᾱ* (*μνη*) and *χρη* show no stem variation, any more than the present stems of this character (cf. p. 396), yet in stems capable of variation we do find traces, though scanty, of a distinction between strong and weak forms.

Thus *ἄσμενος* √*σϝᾱδ* beside *ἥσατο*.
πάλτο „ *πῆλε*.

In both *πῆλε* and *ἔφηνα* the long vowel is original, and not the result of lengthening in compensation for loss of σ, for in that case it would be ᾱ, as in *ἱστάς* for *ἱσταντς*, or *ἐκέρδᾱνα* for *ἐκερδανσα*.

We might exemplify stem variation by comparing *ἔστησα* (*ἔστᾱσα*) with the weak *ἔστᾰσαν* (M. 56) which is transitive in meaning. But the form is uncertain. La Roche reads *ἵστασαν*, which is probably right.

On the whole question of stem variation in the sigmatic aorist we may say that, though there is sufficient reason for assuming an original alternation of the strong and weak stem, yet in Greek, as in Sanskrit, the strong form has prevailed and been extended from the singular of the indicative active into the plural and dual of that tense as well as into the middle voice.

A sigmatic aorist form is perhaps to be traced in Epic *ἴσαν*, beside *ᾔσαν*, the 3rd pl. of *ᾔδη*. The *σ* is also shown in *ᾔστην*, *ᾔσμεν*, etc., which can stand for *ἠϝιδ-σ-την*, *ἠϝιδ-σ-μεν*. *ᾔδη* for *ᾔδεα* will then stand for *ᾔδεσα* (= *ἠϝειδεσα*), Sk. *á-vediṣ-am*, with the strong stem, while *ἠϝιδ-σ-μεν*, etc., show the weak stem.

After the type of *ἔμνη-σα*, *ἔχρη-σα*, we have the aorists of the denominative verbs, *ἐτίμη-σα*, *ᾤκη-σα*, *ἐμίσθω-σα*. Verbs in *-εω* often have the short vowel in the sigmatic aorist, e.g. *ἐτέλε-σα*, Ep. *ἐτέλεσσα*, but in this instance the stem is *τελεσ-*.

In the Homeric *καλέσσαι*, *ὀλέσσαι*, *ἐλάσσαι* the double *σσ* is due to the analogy of the aorists of stems ending in *σ* or a dental mute, as for instance *ζέσ-σαι*, *τελέσ-σαι*, *ἐρέσ-σαι* (*ἐρετ-*), *χάσ-σατο* (*χαδ-*). Upon the same analogy we have such aorists as *ἐκόρεσσα*, *ἐδάμασσα* from *κορέννυμι*, *δάμνημι*.

Sigmatic formations with the thematic inflexions are to be found in the Homeric *ἶξον*, *ἐβήσετο*, *ἐδύσετο*, *λέξεο*, *ὄρσεο*, *οἴσετε*, etc.

The aorist optative in *-σαιμι* must be regarded as modelled upon the thematic *-οιμι*, in place of the regular *-σιην* as in *εἰδείην* (= *εἰδεσιην*).

Pluperfect.

The Pluperfect serves as an augmented preterite to the perfect stem.

In form it sometimes approaches closely to the aorist system, as we have already seen in the case of *ᾔδεα*, *ᾔδη*.

We can distinguish the formations into two main divisions :—

1. Where the pluperfect is distinguished from the perfect by the augment, which is often omitted, and the secondary endings.

Thus answering to	*γέγατον*	plupf.	*γεγάτην*.
	μεμά-ᾱσι	„	*μέμασαν*.
	ἑστήκασι	„	*ἕστασαν*.

We have also the Homeric *ἐπέπιθμεν*, *ἐδείδιμεν*, *ἐίκτην*, and in the middle *ἐτέτυκτο*, *ἠλήλατο*.

Along with these forms we may rank the thematic *ἐγέγωνε*, *ἄνωγον, ἐμέμηκον* (Monro, *H. G.* § 68), of which we have already spoken under the perfect.

2. We have the pluperfect compounded of the perfect stem, the augment, and the suffix *-εα* (for *-εσα*), Attic *-η*, as in *ᾔδη* for *ᾔδεα* (*=ἠϜειδεσα*), and in the plural *ᾖσμεν* for *ἠϜιδσμεν*.

The same termination *-εα* is added on to the long stem in *ἐτεθήπεα*. The original inflexion should run—

εἱστήκεα *εἱστήκεας* *εἱστήκεε* (= *εἱστήκει*).

From *ᾔδη* we have 2nd sing. *ᾔδησθα* as the regular Attic form answering to *οἶσθα*.

In the plural we have *ἴσαν*, unaugmented in Homer, and *ἐοίκεσαν* (N. 102).

The proper form of the pluperfect endings in Attic Greek is discussed by Rutherford (*N. P.* 229, sqq.), who pronounces the singular endings to have been *-η* (for *εα*), *-ης* (for *-εας*), and *-ει* or *-ειν* (for *-εε*); and the 3rd plural ending *-εσαν*, as in *ἐγρηγόρεσαν* (Ar. *Plut.* 743). In Hellenistic Greek the *-ει* of the 3rd person has been extended to the other persons, and we have *εἱστήκειν, -κεις, -κει*.

Sigmatic future.

There are three types in the formation of the sigmatic future.

1. The verb stem with the suffixes *-σο, -σε*, as in *πεύσομαι, δείξω, στήσω, δώσω*, Sk. *dā-syá-mi*, cf. *τελέσ-σω* Epic, *κηρυκ-σω* (*ξ*), *τιμή-σω*, of derivative stems. *μιγή-σομαι, λυθή-σομαι*, come from the aorist stems of *ἐμίγη-ν, ἐλύθη-ν*, just as *γνώ-σομαι, σβή-σομαι* from the aorist stems of *ἔγνω-ν, ἔσβη-ν*.

The intervocalic *σ* remains, contrary to phonetic rule, in *δώσω, μνήσω*, etc., as it does in *ἔστησα* and other formations (cf. p. 329).

2. The verb stem with *ε*, *α*, or *ο*, representing the *svarabhākti ə* and the suffixes *-σο, -σε*.

τενέω from *τεν-ε-σω*, Dor. *τενίω*, Att. *τενῶ*.
φθερέω from *φθερ-ε-σω*, Dor. *φθερίω*, Att. *φθερῶ*.

Cf. Sk. *tan-i-syámi*, with an auxiliary *i* before the sibilant.

In the same way we must explain the future of derivative verbs such as *καθαρῶ, ἀγγελῶ*.

In many cases the ϵ, α, ο (= ə) is not a suffix, but a substantive part of the verbal root, e.g. ὀλέω = ὀλῶ for ὀλϵ-σω, with which we may compare ὀλέ-σσαι, ὀλϵ-τήρ.

κρέμα-μαι fut. κρεμά-σω, κρεμῶ.
ὄμνυ-μι „ ὀμο-ομαι, ὀμοῦμαι.

In I. 274 we find ὀμεῖται, which points to a 1st pers. ὀμϵ-ομαι like ὀλέ-ω, but ϵο in Homer would contract to ϵυ and so give ὀμευμαι. We must assume a stem ὀμο-, as in ὤμο-σα, ὀμο-τός, and suppose that ὀμεῖται is an imitative form upon the analogy of καμεῖται.

The so-called Attic futures like the Epic καλέω, τελέω, ὀλεῖται, κορέεις, τανύω, have lost the intervocalic σ, but in the aorist we find ἐκάλϵ(σ)σα, ἐτέλϵ(σ)σα, ἐκόρεσα, etc., in which the σ did not drop out. In the only case in which σ has disappeared, e.g. ᾔδεσα, ᾔδεα (ᾔδη), contraction has ensued, and the form has lost the trace of its aorist origin.

ἐγήρᾱν.—From the stem γηρᾰ we should have expected aorist ἐγήρᾰσα, answering to Sk. *ájariṣam*. But instead of this we have ἐγήρᾱν, after the type of ἔδρᾱν. The long γηρᾱ of ἐγήρᾱσα has followed the analogy of the ᾱ-stems. Similarly
beside ᾔδεα we have εἰδήσω in Homer.
„ κορέω „ κεκορημένος.
„ μαχέσασθαι „ μαχητής, μαχήσομαι.

Doric future.

3. The verb stem with suffixes -σϵο, -σϵϵ, the so-called Doric future, e.g. πραξέω (Delph.), or with the ι of other Doric dialects, βοαθησίω (Cret.).

The Doric future in -ουμαι was practically not used by Attic writers (cf. Rutherford, *N. P.* 92). In the MSS. we find forms such as φευξοῦμαι, πνευσοῦμαι, πλευσοῦμαι, and when the metre requires, Euripides and Aristophanes employ the Doric form φευξοῦμαι (Ar. *Ach.* 1129; *Plut.* 447; *Av.* 932). But in the prose writers φεύξομαι, πλεύσομαι, πνεύσομαι alone are correct.

This Doric future is the result of ‘contamination’ between the future in -σω and the future in -ϵω (for -ϵσω). The ι in Doric appears only before the vowels ο and ω, just as in the same dialect we have *θιός* for *θεός*, *κοσμίοντες* and *ὁρμιόμενοι*. The Doric -*ιο*- then of *πραξίομεν* is purely dialectic for -*εο*-. In Homer we find *ἐσ-σεῖται* and *πεσέονται*.

We have seen that in many futures from stems ending in vowels the *σ* has disappeared, e.g. *καλῶ*, *ἐρύουσι*, etc., and from stems ending in *σ*, e.g. *τελῶ* (*τελεσ*-) and Epic *κορέει*, *μαχέονται*. From verbs in -*αω* we have the Homeric futures *δαμᾷ*, *κρεμόω*, *ἐλόωσι*, etc., and this type has extended to the parallel verbs in -*αζω*, e.g. Attic fut. *βιβῶ*, *πελῶ*. From verbs in -*ιζω* we more often have futures like *βαδιεῖ*, *κουφιεῖς*, etc., than the forms in -*ισω*.

From verbs whose stems end in a liquid we have the Homeric *ἀγγελέω*, *κερέω*, but also *διαφθέρσει*, *θερσόμενος*.

In dealing with Homeric futures we have to remember that as the pure conjunctive in independent sentences expresses *will*, it is often possible for a future to be an aorist conjunctive, especially in the first Person.

From the perfect stem we have futures like the Homeric *κεχαρη-σέμεν*, Att. *ἑστήξω* (*κσ*), *τεθνήξω* (*κσ*), and the middle forms *εἰρήσεται*, *γεγράψεται*, *ἐσκέψομαι*, etc.

The conjunctive mood.

Where the indicative is without a thematic vowel, then the suffix of the conjunctive is *ο*, *ε*, as in

Homeric *ἆλτο* conj. *ἅλεται*.
ἐρύσσαμεν „ *ἐρύσσομεν*.
ἐπέπιθμεν „ *πεποίθομεν*.

So in Sanskrit we have the indicative *hán-ti*, conj. *hán-a-ti*. Where the stem ended in a vowel there ensued contraction, which dates back probably to the original language. In Attic we have *πρόσθη-ται*, *προήσθε*. In Homer we find formations which must be regarded as new, e.g. *στή-ο-μεν*, *θή-ο-μεν*, *βλή-ε-ται*, etc., where the thematic vowel has been added on without contraction to the full form of the stem. The hiatus shows that the forms do not date back to the original language. We find a variation in writing the long stem before the endings in Homer, as e.g. *θείω*, but *θή-ῃς*, *βείω*, but *βή-ῃς*. For a discussion upon this point cf. Monro (*H. G.* Appendix C). As we have had occasion to remark before, *ε* of the old alphabet had to do duty for *ε*, *η*, and sometimes *ει*, and this has led to orthographical confusion.

The presents which have a stem capable of variation show the full form in the conjunctive—

√*ἐσ-* conj. *ἔω* (Att. *ὦ*) Sk. *ásāni* Lat. *ero.*

If we are to judge from the Homeric *εἴδομεν* beside the indicative *οἶδα*, the middle degree of the root was appropriate to the conjunctive. The proper form then of the conjunctive of *ἐπέπιθμεν* should once have been *πεπείθομεν*.

Even in Homer some conjunctives of non-thematic stems pass over into the thematic conjugation, e. g. *ἄληται*, *πέμψωμεν*. In later Greek the long vowel became the rule in the conjunctive; but the old formation with the short thematic vowel remains in the Attic futures *ἔδομαι*, *χέω* (for *χεϝω*, conj. of *ἔχεα*), and *πίομαι*, which are really conjunctives. Besides these in Homer we have *βέομαι* (cf. *βίος*) and *δήεις*.

The strong stem of the conjunctive has sometimes been reduced, as in *ἴω* for *ει̯ω*. In Homer we find *ῑ̆ομεν*, where *ῑ* may represent *ει*.

In thematic verbs.

In the thematic conjugation, where the indicative has the thematic vowel, we find long *ω*, *η* as the suffixes of the conjunctive:—

φέρωμεν *φέρητε*, cf. Sk. *bhárātha.*
ἴδωμεν *ἴδητε.*

In *φέρωσι*, *φέρωνται* the lengthening is not regular, for, as we have already seen (p. 183), the vowel should be shortened before *ντ*.

The Latin *ferā-* in the conj. seems to point to original Indo-European stem *bherā-*, in which case we must assume that Greek has taken *ω*, *η*, after the analogy of *ο*, *ε* of the indicative and of the conjunctive of non-thematic verbs, and that *φερᾱμεν*, *φερᾱτε* have passed to *φέρωμεν*, *φέρητε*, following *φέρομεν*, *φέρετε* of the indic. in the quality of the vowel.

Imperative mood.

The Imperative has no special mood sign as distinct from its person endings. It is formed in Greek by adding its person endings to the stems of the present, aorist, and perfect, active, middle and passive. In Latin all imperatives, with the single exception of *memento* (*me-mn̥-tōd*) are formed from the present stem.

In Sanskrit only three persons, the 2nd and 3rd sing. and the 3rd plur., have special forms. In the 2nd sing. Sanskrit has *bhára* (Greek *φέρε*, cf. Latin *rege*), and a parallel form, also used for other persons, in *-tāt*, *bháratāt* (cf. Greek *φερέτω*, Latin *regito*). The 3rd sing. in Sanskrit ends in *-tu* (*bháratu*) and the 3rd plur. in *-ntu* (*bhárantu*). In Greek we have 3rd plur. *φερέτωσαν*, *φερόντων*, in Latin *regunto*. On the ground of the paucity of the forms and the want of distinction between the persons, it has been supposed that the imperative had not originally distinct forms for the separate persons, but resembled the Infinitive in having but one formation for different persons and numbers. (See Delbrück, *S. F.* iv. 118; Brugmann, *M. U.* iii. 2.) The arguments for this view may be briefly stated as follows.

The pseudo-conjunctive.

Certain indicative forms with the secondary endings have in the Arian languages a double form, one with the augment, the other without it. This latter type has two distinct functions. On the one hand it is a preterite indicative and indistinguishable in meaning from the augmented form; on the other hand it has a conjunctive or imperative meaning. In the latter case it has been called the pseudo-conjunctive or injunctive mood. In the 2nd plur. this latter form is common to all Indo-European languages, and not uncommon in the 2nd and 3rd dual.

In Greek we have in Homer unaugmented preterites, e. g. *φέρετε*, and also corresponding imperative forms, e. g. *φέρετε*, *φέρετον*, *ἕσ-τε*, *ἴ-τε*, *δό-τε*, *δείξα-τε*, *κεκράγε-τε*, Latin *vehi-te*, *mone-te*, *es-te*, *dă-te*, *fer-te*, etc., where the endings *-τε*, *-te*, correspond to the secondary Sanskrit ending *-ta*. In the singular we have *δό-ς*, *ἕ-ς*, *θέ-ς* (apparently for **δως*, **ἧς*, **θης* answering to assumed indic. forms **ἔδως*, **ἔθης*), *σχέ-ς*, *ἐνίσπε-ς*, and similarly the middle imperatives like *ἵστασο*, *τίθεσο*, *θοῦ* (beside the augmented forms *ἐτίθεσο*, *ἔθου*, etc.); in Latin *ēs*, *ēste* (for **ed-s*, **ed-te*), *ĕs*, *ĕste* (for **es-s*), *fer*, *vel* (for **fer-s*, **vel-s*). We may perhaps also put here the forms given by Festus (p. 205), *prospices* (*prospice*), *perfines* (*perfringe*), cf. *sins* (*sine*) in *Carm. Arv.*

We may further note that in the oldest Sanskrit prohibition was expressed by the particle *má*, Greek *μή*, with this pseudo-conjunctive which corresponds in form to the augmentless form of a past tense (Whitney, *Sk. Gr.* § 579), and which corresponds to the Imperative forms in question.

The only forms that we can be sure were exclusively imperative are:—

(1) The form consisting of the pure verb theme without personal suffix, Indo-European *bhére*, *φέρε*, *rege*, Sanskrit *ihi*.

(2) The form with the suffix *-dhi*, *ἴσ-θι*.

(3) The form with the suffix *-tōd*, Indo-European *bhere-tōd*.

Of the suffix *-dhi*, which does not appear in Latin, no explanation can be given. The suffix *-tōd* is probably of substantival rather than verbal origin. In Sanskrit the corresponding suffix *-tād* appears as the termination of the 2nd pers. of all numbers and of the 3rd sing. In Greek the form in *-τω* is ordinarily 3rd sing., but the Hesychian glosses (as emended) *ἐλθετῶς· ἐλθέ*, *φατῶς· ἀνάγνωθι* make it probable that it was also used for the 2nd sing. In Latin *esto(d)* is 2nd and 3rd sing.; the corresponding form in Umbrian is 2nd plur. If therefore the termination *-tōd* was used in all persons and numbers, it cannot clearly be of a verbal character, nor can it be of pronominal origin and to be compared, as some have thought, with the termination of *is-tud*. In form it is the abl. sing. of a verbal adj. in *-tós*, and if this is really its origin, it will explain the accent on *ἐλθετῶς*, *φατῶς*. It may be noticed that in inscriptions *nitito*, *utito*, *censento* appear as passive forms, which is a further indication that the termination is not verbal.

It would therefore seem that the imperative has been made up out of certain old forms, conjunctive or imperative in meaning, in which the distinctions of person were not clearly marked. But beyond this it is not possible to go. We can say that phonetically the 'injunctive' is identical with the unaugmented past tense of the indicative. That historically there is any real connexion between the two it is hard to believe. We may however be sure that the parent speech did not possess a fully developed imperative with special forms for each number and person. It was easy to supply the forms wanting from the conjunctive mood, whose meaning is almost indistinguishable from that of the imperative.

Thus far we have been speaking of the imperative as a whole. As to tenses, in the Arian languages there is hardly any tense existing except the present, which is used in positive commands. In prohibitions the aorist of the pseudo-conjunctive, rarely the present, is used.

In Greek we may notice that the 2nd sing. of the sigmatic aor. imper. act. and mid. (e.g. *κλέψον*, *κλέψαι*) are strange forms which apparently originated within the limits of the Greek language. In prohibitions the rule is to say *μὴ κλέπτε* but *μὴ κλέψῃς*. In the oldest Sanskrit, as we have seen, *má* was used in prohibitions with the pseudo-conjunctive and not with the Imperative; in Greek the Imperative had been already formed into a distinct mood out of the old isolated imperative forms and the spurious conjunctive, and it was therefore possible to say *μὴ κλέπτε*. But as the aor. imper. was a later formation, *μὴ* was used only with the aor. conj., and this use remained a fixed idiom of the language even after the creation of an aorist imperative. If this account is correct, it is vain to look for any psychological explanation of the difference between *μὴ κλέπτε* and *μὴ κλέψῃς* (Monro, *H. G.* § 328).

Endings of the Imperative.

In thematic verbs the 2nd sing. act. of the imperative appears in *φέρε*, Sanskrit *bhára*. In the aor. *ἰδέ*, *λαβέ*.

In non-thematic verbs the ending is *-θι*, Sanskrit *-dhi*, *-hi* e.g. *ὄμνυ-θι*, *ἴ-θι*, Sanskrit *ihi* with weak stem. But *ὄμνυε*, *καθίστᾱ*, *τίθει*, *δίδου* have been assimilated to the thematic system.

On the forms in *-s* (*δός*, *θές*, *σχές*, *ἐκφρές*, etc.) and in *-τω* (*φερέτω*) see above.

Answering to the active *φέρετε*, *φερέτω* the middle has *φέρεσθε*, *φερέσθω*. The forms *φερέτω*, *φερέσθω* were pluralised in the different dialects in different ways, e.g. *φερέτωσαν*, *φερόντων*, *φερέσθωσαν*, *φερέσθων*, which however we need not discuss here, as no certain explanation can be given of them.

Optative mood in non-thematic stems.

The form of the Optative mood depends upon whether the tense-stem is thematic or non-thematic in the Indicative. In non-thematic tense-stems the suffix is *-ιη-* for the sing. of the active and *-ῑ-* for the dual and plural active and all numbers in the middle :—

ε-ἴη-ν for *ἐσ-ιη-ν* in the singular.
εἶμεν for *ἐσ-ι-μεν* in the plural.

Cf. Latin *siem* (=*s-iē-m*) and *s-ī-mus*. Sanskrit *syām*, pl. *syā́ma*, with the weak √*s* both in singular and plural, while Greek has √*ἐς*.

The original form of the 3rd pl. appears in Elean *συν-έαν*, for *-ει̯αν* (=*-εσ-ι̯-αν*(*τ*)), Indo-European *s-i-ń̥t*. The Attic *εἶεν* is a new formation (cf. p. 380).

Instances of the optative of non-thematic tenses with weak stem and suffix *-ιη-* are to be found in the Homeric *βα-ίη-ν*, *θε-ίη*, *ἁλο-ίη-ν*, *φα-ίη*, *κιχε-ίη*, *ἀνα-δῡ́-η* (for *-δυιη*).

Of the plural with weak stem and suffix *-ῑ-* we have the following: *φα-ῖ-μεν*, *θε-ῖ-μεν*, *δο-ῖ-μεν* and in the middle *δο-ί-μην*, *θε-ῖ-το*.

τιθε-ίη-ν and *διδο-ίη-ν* are variations for the original *τιθ-ιη-ν*, *διδ-ιη-ν*, Sanskrit *dadh-yā́m* and *dad-yā́m*, just as in the indicative, *τίθε-μεν*, and *δίδο-μεν* take the place of *τίθ-μεν* *δίδ-μεν* (cf. p. 237).

The accentuation of *τιθεῖμεν*, *διδοῖμεν* (from *τιθε-ι-μεν*, *διδο-ι-μεν*) shows that these optatives have followed the analogy of *παρεῖμεν*, *εἰδεῖμεν*, which arose out of *παρ-εσ-ῑ-μεν*, *εἰδεσ-ι-μεν*. *εἰδείην* is an old optat. of the sigmatic aor. (cf. on *ᾔδη*, p. 428).

Perhaps *ἱείην* (T. 209) stands for *ἱε-σ-ι̯ην* and points to *ἤϊα* being an aorist (=*ἠι̯-ε-σα*), but more probably it is a new formation after the pattern of *εἰδείην*, just as on the similarity of δεδιέναι and εἰδέναι was modelled the δεδιείην of Plato after the pattern of εἰδείην.

The aor. optatives like δείξαιμι, δείξαις, etc., are new formations upon the analogy of the thematic -οιμι, -οις. They are not the regular Attic forms (cf. Rutherford, *N. P.* 429). Even in tragedy the forms -ειας, -ειε(ν) are more frequent than -αις, -αι: much more so then in Attic prose.

Aeolic optative.

The sigmatic optat. in -σεια has the name of the Aeolic optative. It was probably extended from the 3rd plural, δείξειαν, which may be for δεικ-σεσ-ι̯-αν (cf. p. 427).

The contracted verbs in Attic have in the singular of the optative the forms φιλοίην, τιμῴην and in the plural the short φιλοῖμεν, τιμῷμεν. The Attic φιλοίην does not agree with the Aeolic φιλείην, but is due to the analogy of the optative of δίδοιμι. Thus in the dual and plural optative of δίδοιμι we have διδοῖμεν, and the aorist δοῖμεν. These forms agreed with the dual and plural optat. of the contracted verb, viz. φιλέοιμεν, φιλοῖμεν. The analogy was extended to the singular, and so we have φιλοίην, like δοίην, διδοίην.

The Aeolic φιλείην on the other hand may be compared with τιθείην, θείην from τίθημι (cf. p. 410).

Another illustration of the working of analogy in the optative may be found in the following: σχοῖμεν resembles δοῖμεν and hence in the singular we have σχοίην beside δοίην : παράσχοιμεν resembles λύοιμεν and hence παράσχοιμι like λύοιμι.

In thematic stems.

If the Indicative has the Thematic vowel the suffix is -ι̯- :— φέροις Sanskrit *bhárēs*. ἴδοις Sanskrit *vídēs*.

In the first sing. we have the primary ending -μι, φέροιμι, but answering to the Sanskrit ending in *-am* (= m̥), we should expect in Greek φεροια. -οιμι, however, has taken the place of -οια. There is no good ground for assuming such an ending as -οιν in the optative of thematic verbs. The form τρέφοιν rests only on the authority of the grammarian George Choeroboscus (cf. *New Phryn.* p. 450).

In the rest of the persons there is nothing further to notice, except the third plural φέροιεν, where we should rather expect φέροιαν for original -n̥t (cf. p. 380).

The Infinitive.

We have already spoken of the distinction between the Verb Finite and Infinite. The Infinitive is Verbal in so far as it implies predication, and as the words dependent on it are constructed as with the Finite Verb. Historically the forms of the Infinitive are in their origin substantival. In Sanskrit the Infinitive in the later language ends in *-tum* or *-itum*, e.g. from √*i* (to go), infin. *étum*. But in the Veda and Brāhmana 'a number of verbal nouns in various of their cases are used in constructions which assimilate them to the infinitive of other languages' (Whitney, *Sk. Gr.* 969).

Thus from the stem *vidmán* there are the dat. *vidmáne* and the instrumental *vidmánā* (Delbrück, *S. F.* iv. 121). *vidmáne* answers to the Greek infinitive *ϝίδμεναι*. The Sanskrit *dāváne* again answers to the Greek *δοῦναι* (Cyprian *δοϝεναι*) and from the stem *dāván* there is no other case.

Origin of the infinitive.

As Professor Max Müller (*Chips* iv. 51) says, 'As far as Sanskrit grammar is concerned we may safely cancel the name of infinitive altogether and speak instead boldly of datives and other cases of verbal nouns.' These datives can, like other Sanskrit nouns, govern the same case as the verb, and in them is to be found the origin of the infinitive. We need here only concern ourselves with those terminations which have a corresponding form in Greek. Thus Greek *-μεναι* answers to Sanskrit *-máne*, Greek *-ϝέναι* to Sanskrit *-váne*, while the Greek infinitives in *-μεν* may stand for the Locatives of stems of which the Dative ending was *-μεναι*. Greek *-σαι* answers to Sanskrit *-se*.

In Sanskrit these case forms expressed purpose and consequence. In Latin too this use of the dative case was common. In Greek the dative was not so employed. Thus in Greek we should have *ὥρη ἐστὶν εὕδειν* (not *ὕπνῳ*), but in Latin *munitioni tempus relinquere* (Monro, *H. G.* § 242). Conversely while in Greek we have the infinitive continually used to express purpose and consequence, in Latin this use of the infinitive is almost confined to poetry and in Classical Sanskrit is no longer employed.

In Greek the dat. ending in -αι was not preserved in nominal declension, and as the *dativus commodi* was not applied to things, the nominal origin of the Infinitive forms was forgotten and they ceased to be regarded as real case forms. The substantival origin of δόμεναι for instance was lost sight of, and it was brought into closer relation with the different verbal stems. As beside ἔδοσαν there stood δώσουσι, so beside δόμεναι there arose δωσέμεναι. For the growth of such constructions as the Accusative with the Infinitive in Greek cf. Monro (*H. G* ch. x.).

Terminations of the infinitive.

The ending -θαι appears in ἧσ-θαι, πεφάν-θαι (for which there is no need to assume πεφανσθαι), ἐστάλ-θαι, τετύχ-θαι of the perfect. With this ending we can compare Sanskrit *-dhyāi* in *bhára-dhyāi*. This is a dative infinitive of the old language (cf. Whitney, § 976).

The ending -σθαι stands related to -θαι as -σθε to -θε of the second pers. plur. indicative. This ending appears in different tenses, viz. τίθε-σθαι, θέ-σθαι, φέρε-σθαι, ἰδέ-σθαι, λελύ-σθαι, λύσα-σθαι, λύσε-σθαι and has become the common Greek form.

The suffix -μεναι, which is Epic and Lesbian, appears in Fίδ-μεναι, θέ-μεναι, γνώ-μεναι, μιγή-μεναι of non-thematic tense-stems; in εἰπ-έ-μεναι, etc., of thematic.

The suffix -μεν, which may be locative (cf. Sanskrit *kár-man*) appears in ἴ-μεν, δό-μεν, τεθνά-μεν after a short vowel; and in the thematic εἰπ-έ-μεν.

The suffix -εναι (= -Fεναι) appears in the Cyprian δοFεναι, of unknown accent, Sanskrit *dāvánē*, ἰ-έναι, δεδι-έναι, εἰδ-έναι and in many instances where a long vowel points to the absorption of ε, as in δοῦναι, θεῖναι, στῆναι, βῆναι, ἁλῶναι, ἀῆναι, etc. Later feeling tended to regard -ναι alone as the suffix, as for instance in διδό-ναι, τιθέ-ναι, τεθνά-ναι, etc., of which there is no trace in Homer. There is also no instance in Homer of -εναι as an ending of the perfect infin. active, nor in Aeolic or Doric.

-ειν is the normal ending of the thematic conjugation—e. g. ἔχειν, but in Lesbian ἔχην, in Cretan φέρε-ν.

Attic *-ειν* before the archonship of Euclides was written *-εν*. There is no certain explanation of this ending. It is usually supposed to stand for *-ϝεν*, Sanskrit *-van*, as in *ádhvan* of the Veda, *φερε-ϝεν*, *φερε-εν*, *φέρειν*. The *-ε-ειν* of Homer is an anomalous ending which may in most cases be written *-ε-εν*; St. *βαλε-*, Inf. *βαλέ-εν*, *βαλεῖν* (cf. Monro, *H. G.* § 85).

The ending *-σαι* of the sigmatic aorist may be compared with Sanskrit *-se* in *ji-ṣé*.

The Participle.

As the Infinitive is an abstract noun, the participle takes rank as a Verbal Adjective, verbal in that it implies a predication and goes with the same cases as the finite verb, but nominal in that it cannot by itself form a predication.

Participial terminations.

There are many different participial suffixes, with some of which we have already dealt in treating of nominal declension.

1. *-nt-*, *-n̥t-* : *λείπων*, *λιπών*, *λείψας*, *λείψων* : fem. in *-ντ-ι̯α*, viz. *λιποῦσα* (=*λιποντι̯α*), *λείψασα*.

2. *-ϝώς*, *-υῖα* (or *-ϝεῖα*), *-ϝός*; cf. p. 312.

3. *-μενο-*, middle suffix of all tenses. It is identical with the reduced *-μνο-* of *βέλε-μνον*, Latin *-mino-*, *-mno-*, Sanskrit *-māna-*. The rule of the vowel variation of the stem is not clear.

4. *-το-*, as in *κλυ-τό-ς*, Sanskrit *çru-tá-s*, which is mainly adjectival.

5. *-τεο-*, *δο-τέο-ς*.

6. *-νο-*, with the same meaning as *-το-*, was once a participial suffix, but in Greek is purely adjectival, as in *στυγ-νό-ς*, *σεμ-νό-ς* (*σεβ-νο-ς*), *στεγ-νό-ς*, *ἁγνό-ς*, Sanskrit *bhug-ná-s*, Latin *ple-nu-s*, etc.

7. *-ι̯ο-*, in the adjectives *ἅγ-ιο-ς*, *στύγ-ιο-ς*, Sanskrit *-īya-*, Latin *exim-iu-s*.

The Latin System of Verb-inflexion.

The Latin system of verb-inflexion is very different both from that of Greek and that of the original Indo-European language. The chief characteristics are as follow:—

(i) The secondary person-endings have mostly superseded the primary: the majority of Latin person-endings correspond to the Greek terminations -*ν*, -*ς*, -(*τ*), rather than to -*μι*, -*σι*, -*τι*.

(ii) The system has lost the augment (or at any rate the syllabic augment), and consequently the simple imperfect, and the simple thematic and non-thematic aorists. The aorist-stem, as in Greek, often appears in the system of the present (p. 388).

(iii) The middle formations have disappeared, and in their place we have a passive in -*r*, which is also found in Celtic.

(iv) The sigmatic aorist is changed both in form and meaning: in meaning it has come to partly coincide with the perfect, and hence the future perfect and pluperfect are formed from this stem.

(v) The future in -*so* has almost entirely disappeared.

From this it will be seen that of the four original stem-systems in the Indo-European verb, the present, aorist, perfect, and future, the present system alone in Latin has remained intact.

The Person-endings. Active Voice. 1st sing.

The person-endings are as follows:—1st sing. The primary termination in non-thematic verbs is -*m* (for -*mi*), in thematic verbs -*ō*.

Of these -*m*(*i*) is kept only in *sum* for *ésmi* (cf. Dor. ἐσμί), which on the analogy of the plural became *sm*(*i*), *sm̥* and *sum* (p. 447). For the loss of final -*i* we may compare *ẹt* (Greek ἔτι), *ut* (*uti*, Umbr. *ute*), *tot* (cf. *toti-dem*, Sanskrit *táti*), *ob* (Greek ἐπί), *ad* (Sanskrit *ádhi*), *per* (περί), *super* (cf. ὑπείρ, Sanskrit *úpari*), etc. -*m* in the historic tenses (*credeba-m*) and the subjunctive (*creda-m*) is the secondary termination, and represents an original -*m*, not -*mi*. For *inquam* cf. p. 447.

As to the termination -*ō*, the explanation given by Schleicher was that it represented an original -*ōmi*, -*ōm*. This however is phonetically impossible, and the corresponding Greek form ἐθέλωμι, so often quoted, is perhaps itself the result of analogy. In some presents in the Avesta we find -*ā*, which also appears in some Vedic subjunctives (*brávā*, *stávā*): in Greek -ω, in Latin -*ō* are universal, and traces of the same termination are also found in the Celtic and Germanic languages. It is clear therefore that the termination is primitive, and possibly *fer-ō* may be by prehistoric contraction for *fer-o-a*, where -*o* is the thematic vowel, while *-a* may be identical with the termination of the Greek perfect (*M. U.* i. 140, ii. 121, *Z. G. d. P.* p. 61).

2nd sing. 2nd sing. The termination in both primary and secondary tenses is *-s*, the loss of *-i* having obliterated the distinction.

3rd sing. 3rd sing. The termination is *-t(i)*, *-t*.

The occasional appearance of a long vowel before the termination of the 2nd and of the 3rd sing. in the 3rd conjugation is purely metrical. The lengthening is only found in the caesura, and does not point to an originally long final syllable any more than *fatigamūs* (*Aen.* 9. 610). In cases like *amāt*, *habēt*, *redīt*, however, it is possible that it may be a survival of the original contraction from *amai̯it*, *habei̯it*, *redei̯it* (*M. U.* i. 174, note).

The following list of instances of this lengthening may be useful. Lucr. 2. 27, 4. 337; Virg. *Ecl.* 3. 97, 7. 23; *Georg.* 2. 211; *Aen.* 1. 308, 5. 167, 480, 853, 8. 363, 9. 9, 10. 67, 433, 12. 883; Hor. *Od.* 1. 3. 36, 1. 13. 6, 2. 2. 14, 2. 13. 16, 3. 5. 17, 3. 16. 26, 3. 24. 5; *Sat.* 1. 4. 82, 1. 5. 90, 1. 9. 21, 2. 1. 82, 2. 2. 47, 2. 3. 260; Prop. 1. 10. 23; Ov. *Met.* 3. 184, 6. 658, 9. 611, 12. 392; *Her.* 9. 141; *Ep. ex Pont.* 1. 3. 74, 1. 4. 46; Val. Flacc. 8. 259; *-mūs* occurs in Plaut. *Curc.* 438; Virg. *Aen.* 9. 610; Ov. *Met.* 14. 250.

1st plural. 1st plural. The termination is *-mos*, *-mus*: we may compare the Doric *-μες*, but the difference of the vowel is a difficulty (cf. *Cerer-us* beside *senatu-is*).

2nd plural. 2nd plural. Termination *-tis*. This is probably in origin a dual form; cf. the Sanskrit dual *váka-thas*. The proper plural termination is kept in the imperative termination *-te* (cf. *este*, *ἐστέ*).

3rd plural. 3rd plural. Termination *-nt(i)*, or with the thematic vowel *-o-nt*. In the case of the thematic verbs of the first and second conjugation we get a new form *ama-nt*, *doce-nt* (for a more regular *ama-o-nt*, *doce-o-nt*, cf. *fini-o-nt*, *statu-o-nt*), formed apparently on the analogy of *ama-s*, *ama-t*, *doce-s*, *doce-t*, etc.

The forms of the 1st conjugation may all have originated in a contraction (cf. *τιμάω* = *τιμῶ*. *M. U.* i. 87); but in the 2nd conjugation it is hard to see how *docent* can be a contraction of *doce-ont*. Johansson *de Verbis Contractis*, p. 192 sqq., takes the inflexion of the present of the 1st and 2nd conjug. to be non-thematic throughout.

It will be noticed that the primary and secondary terminations have everywhere coalesced in Latin, as they do in Greek in 1st and 2nd plural (*-μεν*, *-τε*).

Passive Voice.

The old explanation of the passive termination *-r* was that it was a relic of the reflexive pronoun *se*, originally appended to the active voice to transform it to a middle. This theory was not in itself improbable, and finds its analogy in the Scandinavian languages, where the passive is formed by the addition of *-s*, or in older times *-sk*, i. e. the reflexive pronoun *sik* (Westphal, *Verbalflexion*, p. 25), cf. the English *ba-sk*, *bu-sk*. Unfortunately, however, this theory is not in agreement with the facts of the related languages. The *-s* in Latin might pass between vowels into *r* (cf. *honos*, *honor-is*), but the same *-r* is found as a termination of the passive in Celtic, which does not 'rhotacise' an *s*. *r* is also found in Oscan, but there an *s* between vowels becomes *z*. The *-r* of *honor*, for and by the side of *honos*, is to be explained not as the direct result of rhotacism, but as due to the analogy of the oblique cases where *s* becomes *r* between vowels. We do not find *-r* in *genus* beside *generis*.

It is clear therefore that the *-r* of the passive can have nothing whatever to do with the reflexive pronoun. But no explanation of it has yet been found. In Sanskrit the 3rd plur. of the perf. middle ends in *-re*, and in the Veda other verbal terminations containing *r* are found (Whitney, *Sk. Gr.* § 550). It is now thought that this *r* may have been extended by analogy from the 3rd plural, in the first instance to the 3rd sing. and then to the other persons and members. But this is a mere conjecture.

The forms *legitur*, *leguntur* seem identical with the Greek middles (*ἐ*)-*λέγετο*, (*ἐ*)-*λέγοντο* with the addition of the Latin passive suffix *-r*; but if this is so, the secondary suffixes (Gk. *-το*, *-ντο*) have superseded the primary (Gk. *-ται*, *-νται*) in the present tense in Latin. In the 2nd sing. corresponding to the Greek (*ἐ*)-*λεγεσο* (*ἐλέγου*) we should expect in Latin *legeso-r*, which might become *leges-r*, *leges-e-r*, *leger-e-r* by successive steps, the *e* appearing before *r* in the same way as in *ag-e-r* (p. 71). The final *s* of the existing form *legeris* may be due to the analogy of the 2nd sing. of the active. In *lego-r*, *legimu-r* the suffix *r* is attached immediately to the active forms (*lego*, *legimus*).

Legimini is a participial and not a verbal form, and corresponds to the Greek λεγόμενοι; *legeremini*, *legamini* will then be formed by analogy. The old forms of the 2nd and 3rd sing. imper. *fruimino*, *antestamino*, *famino* (*appellamino* is plur., Cic. *de Legg.* 3. 3. 8) are said to be not for **fruimino-s*, etc., but formed as singulars of the type *fruimini*, as we have a sing. *vehito* beside a plur. *vehite*. The analogy is not complete, but on the imper. see p. 433.

System of Inflexion.

The system of inflexion in each Latin verb may be divided into four groups—

(i) The inflexion of those tenses derived from the present stem (presents of all moods and voices, active participle, infin., act. and pass. and gerund).

(ii) The inflexions of the perfect stem (perf., fut.-perf. and plupf. in many verbs).

(iii) The inflexions of the sigmatic aorist.

(iv) The inflexions of the future and imperf. in *b*.

Present System.

The present stems of verbs in Latin may be classified as follow:—

1. Non-thematic verbs—of which however traces survive only in a few isolated forms still left in systems that otherwise have become thematic—*ēs* (*ĕd-s*), *ĕs* (*ĕs-s*), *es-t*, *fer-s*, *fert*, etc.

2. Thematic verbs—

(i) the thematic vowel is added to the simple stem in its strong or weak degree—(*dūco*, *ăgo*).

(ii) the thematic vowel is added to the reduplicated stem (*si-st-o*).

(iii) the *T*-class (*flec-t-o*).

(iv) the Nasal class (*cer-n-o*).

(v) the Inceptives (*po-sc-o*).

(vi) the *Yod*-class, whether radical (*fug-i-o*, *ama-i̯-o*), causative (*mon-ei̯-o*), or denominative (*statu-i̯-o*). To this class belong all verbs of the 1st, 2nd, and 4th conjugations, and all those of the 3rd whose 1st sing. pres. indic. ends in *-io* or *-uo*.

The above classes all find their parallel in Greek (p. 389). But the Greek non-thematic verbs in *-νυ-*, *-να-* (classes 3 and 4) have become thematic in Latin (*ster-nu-o*, *con-ster-na-re*). Latin has also a few verbs formed by means of suffixes not found in Greek, of the types *cape-ss-o*, *dic-ta-re*, *dic-ti-ta-re*, *ster-nu-ta-re*, *es-uri-o*.

The thematic vowel is either *ŏ* or *ĕ* (cf. p. 374). *ŏ* (*u*) appears in the 1st pers. sing. and plur. and the 3rd pers. plur., *e* (Latin *i*) elsewhere (De Sauss. p. 87).

Non-thematic verbs becoming thematic.

Thus we have—

ἔχω ἔχ-ο-μεν ἔχ-ο-ντι ἔχ-ε-τε *ἔχ-ε-σι *ἔχ-ε-τι
ve-ho veh-i-mus veh-o-nt veh-i-te veh-i-s veh-i-t;
(but cf. vol-*u*-mus.)

True non-thematic verbs are very rare in Latin, and even where they occur, are assimilated in form to the thematic conjugation. *fā-ri* is still non-thematic (cf. φά-ναι); but on the other hand *-ple-o* (cf. πίμ-πλη-μι), *si-st-o* (cf. ἵ-στη-μι), *ser-o* (for *si-s-o*, cf. (σ)ί-(σ)η-μι), *sternu-o* (cf. πτάρνυ-μαι), *stern-o* (cf. στόρνυ-μι) have all taken the termination of the thematic inflexion.

The assimilation to the thematic conjugation probably started from the plurals *sistimus* (for *sí-stă-mos*, cf. ἵστᾰμεν), *serimus* (for *sí-sa-mos*, cf. ἵεμεν), which look like thematic forms from stems *sist-*, *ser-*. We should have expected an inflexion—

si-stā́m(*i*) *si-stā́-s*(*i*) *si-stă-mós*.
Cf. ἵ-στᾱ-μι ἵ-στᾱ-ς ἵστᾰ-μεν.
And *se-rē-m* (for *si-sē-m*) *se-rē-s* *se-ră-mos* (*si-să-mos*).
Cf. (σ)ί-(σ)η-μι (σ)ί-(σ)η-ς (σ)ί(σ)ε-μεν.

But *sísămos*, *sístămos* become regularly *serimus*, *sistimus* (cf. *Jū́piter* and Ζεῦ πάτερ, *cóncipit* and *cápit*, *ádditus* and *dátus*), and hence the whole system was assimilated to the type *verto*, *vertimus*, etc.

A somewhat similar case is the passing of the compounds of *dare* to the 3rd conjugation, *áddămus*, e. g. became *addimus*, whence was formed *addo*, *addunt*, etc.

Similarly there may once have existed a form—

	ster-nā-m	*ster-nā-s*	*ster-nā-t*	*ster-nă-mos.*
Cf.	δάμ-νᾱ-μι	δάμ-νᾱ-ς	δάμ-νᾱ-σι	δάμ-νᾰ-μεν.
Sk.	*stṛ-ṇā́-mi*	*stṛ-ṇā́-si*	*stṛ-ṇā́-ti*	*stṛ-ṇīmás.*

(Whitney, *Sk. Gr.* § 718.)

The singular, it is said, gave rise to *consternāre*, *exsternāre*, the plural to *sternĕre*. (This may be doubted in this particular case, as *consternare* is probably identical in root with Greek πτύρεσθαι, but it is true of *spernĕre* beside *aspernari*.) (Osthoff, *Z. G. d. P.* p. 245.)

Compare in Greek ἄνω beside ἀνύω, κάμνω beside δάμνημι.

We will now consider these two classes separately.

Non-thematic conjugation.

I. Non-thematic Conjugation.

(i) Stems ending in a vowel.

Root *ei̯*, *i*.

(*a*) Strong root *ei̯*, weak root *i*, in *eo*, Sanskrit *émi*, *imás*, Greek εἶμι, ἴμεν. Greek and Sanskrit show the regular Ablaut between the singular and plural. In Latin the strong stem *ei* or *ī* is extended to all numbers and tenses (*īmus*, *ītur*, *ībo* for *eimus*, *eitur*, etc.), the weak stem being found only in the participles *ĭ-tus*, and *-iens* for *i-i̯-n̥t-s*. The strong stem reappears in the oblique cases of the pres. part., as *euntis* for *ei̯-ontis*.

Parallel to *eo* are *queo*, *nequeo*. In all three the 1st sing. pres. indic. has been assimilated to the thematic conjugation.

Root *dā*, *dă*.

(*b*) Strong root *dā*, weak root *dă*, in *dās*, **dāt*, *dă-mus*, *dă-tis*, *dă-tus*. The *ă* seems to represent the *svarabhākti* vowel (cf. Greek δοτός), of which *ă* is the ordinary Latin representative (cf. *cătus*, *rătus*, *stătus*, etc.). It is possible that *dō* may be an 'aorist present,' for the absence of reduplication by the side of δίδωμι is noticeable. There may have once been a strong aorist *(*e*)*dom* beside *ἔδων (cf. ἔδομεν, etc.), corresponding to a possible *(*e*)*stām* beside ἔστην. Then (*e*)*dom* may have passed to the present system, like ἄγω beside ἤγ-ᾰγ-ον, and in part to the thematic conjugation.

(ii) Stems ending in a consonant.

(*a*) Strong root *es*, weak root *s*.

Root *es*, *s*.

The original present would have been—

	és-m̥	*és-s*	*és-t*		*s-mós*	*s-tés*	*s-n̥ ́t.*
Cf.	*ἐσ-μί*	*ἐσ-σί*	*ἐσ-τί*	Sk.	*s-más*	*s-thá*	*s-ánti.*

ĕs-s became regularly *ēs*, and this quantity is invariably kept in Plautus.

**smus* is unpronounceable, and therefore takes a *svarabhākti* vowel, which under the influence of the following consonant is *u*, so we get *su-m-us*. Then this form in turn influences the first person singular, and we get *sum* for the more regular **sem* (*sm̥*), and eventually the 3rd plural (*sunt* for **sent*, *sn̥t*), though in this case the analogy of the thematic conjugation (e. g. *reg-o-nt*) may have operated. The Umbrian 3rd plural is *sent*.

The weak root appears irregularly in the 1st sing. on the analogy of the 1st plur. (*sum* for **esum*), and the strong root in the 2nd plur. on the analogy of the 2nd and 3rd sing. (*es-tis* for **s-tis*). But Osthoff (*M. U.* iv, *Einleitung*, p. vi) is of opinion that *es-tis* beside Sanskrit *s-thă*, *ἐ(σ)-ίη-ν* beside *s-iē-m*, may both represent original forms of the reduced root, *es-* being the form under the secondary accent (Ablaut III, here identical in form with Ablaut II), *s*, the unaccented form (Ablaut IV). The difference between the two would then be due to a difference of function in the sentence. The enclitic form (unaccented) appears in e. g. *necesse 'st*, which would stand to *necesse est* as e. g. Ζεύς ἐστι to Ζεὺς ἔστι. So, too, *pollicitus 's* (written *pollicitus*) is the enclitic form of *pollicitus es*.

Ero for **eso* is a subjunctive, and corresponds to the Greek ὦ, ἔω (for *ἔσω).

In the case of *erām* the stem *erā-* may possibly be distinguished into *e-s-ā-*, where *e* is the augment, *ā* is a root determinative added to the weakest form of the root[1]. *E-s-ā-m* would then be parallel to *inquam*, which is an imperfect in origin and stands for *in-squ-ā-m* (cf. ἐνι-σπ-ή-σω. *Inquit* is an aorist for *in-squ-i-t*; cf. ἔνι-σπ-ε).

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[1] A list of such additions of *ā* to weak roots is given in *M. U.* i. 35. We may quote *hi-āre* beside *hi-sco*; *i-ā-nus* beside *ei̯o*, *ĭ-tus*; *r-ā-mus* beside *ἐρ-ίσσω* etc. But most of them are more ingenious than probable.

The so-called pres. subj. is in reality an optative; the original inflexion was—

	s-iē-m	s-iē-s	s-iē-t	s-ī-mus	s-i-te	s-i-nt.
Cf.	ἐ(σ)-ίη-ν	ἐ(σ)ίη-ς	ἐ(σ)-ίη-(τ)	ε(σ)-ῖ-μεν	ε(σ)ῖ-τε	ε(σ)ῖ-εν.
Sk.	*s-yā-m*	*syā́s*	*syā́t*	*syā́ma*	*syā́ta*	*syús*.

Siem still survives in Old Latin, but in classical times the weak root has been extended throughout the tense. The loss of the initial *e* may be due to the influence of the indicative.

The present participle is quite regular in *prae-sens*, *ab-sens*, *con-sentes*, except that the weak form of the root (*sn̥t-*) has been extended throughout.

Ens is a later barbarism (Quint. 8. 3. 33).

Escit seems to be an inceptive form, standing for *es-scit*; cf. ἔσκε.

Possum (older *potis sum*) is a compound, and the existing forms may be the result of contraction. Thus *potissit* became *poti'sit*, *potisit*, then *pot'sit*, and finally *possit*. But *potest* (whether for *pot'est* or *pote'st*, with the enclitic form of the verb) is quite regular, and this form may have originated the tendency to assimilate the inflexion to that of the substantive verb (cf. Lachmann on Lucr. 5. 880).

Potui, *potens*, *potin* (for *potis-ne*) imply a form **potĕre*, **potire* (cf. *potīri* beside *potĭtur*), or **potēre*.

Root *ed*. (*b*) Root *ed*.

The forms *ēs* (for *ĕd-s*), *ēst* (for *ed-t*), *estis* (*ed-tis*), *esto* (*ed-to*), *esse* (*ed-se*), *ĕd-im* are non-thematic, cf. ἔδ-μεναι: but the rest of the verb has passed to the thematic conjugation. It is possible that the reduced root may be seen in *dens* for *d-n̥t-s*, a present participle parallel to *-sens* (cf. p. 307).

Root *fer*. (*c*) Root *fer-*. This root is non-thematic in *fer-t*, *fer-tis*, *fer-te* (cf. φέρ-τε) *fer-to*, *fer-re* (for *fer-se*). The other forms of the verb are thematic.

Root *vel*, *vol*.

(*d*) Root *vol-*, *vel-* is non-thematic in *vol-t*, *vol-tis*, *vel-le* (for *vel-se*). (For the law governing the interchange of *e* and *o*, v. p. 189.)

With this may be classed *nolo* (for *neu̯olo*), *malo* (for *mag*(*e*)-*u̯olo*).

The 2nd sing. pres. ind. of the last two verbs present some difficulty. The root *fer* should make **fer-si* (Vedic *bhár-si*), which in Latin could only become **ferrĭ*, *ferre* (the final *ĭ* becoming *ĕ*, as in *marĕ*, stem *marĭ*-). The final -*s* of *fer-s* must therefore be on the analogy of all other second persons singular. *Vis* is obscure.

The imperatives *fer*, *vel*, with *ēs*, *ĕs* are pseudo-conjunctives (cf. p. 433, *M. U.* iii. 9); *fer* is for **fer-s* which would become **ferr* and *fer*, so *ĕs* for **ĕs-s*, *ēs* for **ĕd-s*, *vel* for **vel-s* (= **vell* = *vel*).

The forms *cette* (for *ced-te*), *can-te* (*Carm. Arv.*), *cedre* (*cedére*) are more probably syncopated than originally non-thematic.

The Thematic conjugation. Simple thematic presents.

We may now pass to—

II. The Thematic conjugation—

(1) Verbs with the present stem formed simply by the addition of the thematic vowels *o*, *e* (*i*).

These fall into two main subdivisions, the Imperfect Presents and the Aorist Presents (cf. p. 233).

The distinction between Imperfect and Aorist Presents is really implied in the remarks of Westphal (*Verbalflexion*, p. 129) on the quantity of the stem-vowels of Latin presents. His observations may be of some practical value.

1. Presents formed simply by the addition of the thematic vowel to the stem and containing the vowels *i*, *u*, followed by a consonant, have this vowel long. These are what we should now call imperfect presents. The only exceptions are [*fŏre*], *rŭdere* (but *rūdere* Pers. 3. 9.) *fŭrere*, *divĭdere*.

But if the stem is increased by *-ao*, *-eo*, *-io*, *-uo*, *i* and *u* are short. Exceptions are *strīdeo* beside *strīdo*, etc., and presents of the second conjugation with a perfect in *-si* (*rīdeo*, etc.): but here the perfect and often other forms point to original simple present stems, as *frīg-us* to a form **frīgo* beside *frīge-o*. But *jŭbeo* has short *ŭ*, though the perf. is *jussi*.

2. Simple verbs with the stem ending in a consonant and containing the

vowels *a*, *e*, *o* have the vowel short, and often the stem is nasalised. Exceptions are *rādo*, *vādo*, *lābor*, (but *lăbo*), *rēpo*, *cēdo*, *rōdo*. The forms with *ă* are aorist presents, those with *ĕ*, *ŏ*, *ē*, *ā*, *ō* are imperfect presents. (Ablaut II.)

Verbs derived from nouns have a long vowel, *flāveo*, *flōreo*, *tābeo*, also *āreo*, *pāreo*, which cannot be classed as denominatives. But presents not derived from nouns have the vowel short, *ămo*, *mŏneo*, etc.

We may now resume our classification :—

Imperfect presents.

(*a*) Present stems with strong root (imperfect presents) corresponding to Sanskrit 1st verbal class which is paroxytone, e. g. *bhúva*, from √*bhū* (cf. p. 405).

Simple verbs with stem containing *ĕ* :—lego, tego, veho, peto, frendo, pendo, -fendo, pre-hendo (the reduced root is seen in *ἔχαδον* for *ἔ-χn̥δ-ον*, cf. *χείσομαι* for *χενδ-σομαι*), sterto, vergo, etc.

Stems with corresponding derivative forms: — stridĕre (stridēre), tergĕre (tergēre), sonĕre (sonāre), fervĕre (fervēre), lavĕre (lavāre), fulgĕre (fulgēre).

Stems that have passed entirely into the derived conjugation :—crĕp-are, vĕt-are, sĕc-are, tĕn-ere, mĕr-ere.

Stems with diphthongs : — douco (for *deuco), feido (cf. *πείθω*), ūro (for *euso, cf. *εὕω*), lūdo (*loido), claudo, plaudo, laedo, caedo.

Stems with *ī*, *ū* (which cannot be proved to be reduced forms) :—flīgo (cf. *θλίβω*), fīgo, glūbo (cf. *γλύφω*).

Stems with *ā*, *ē*, *ō* :—rādo, vādo, suādeo (derived form), cēdo, rōdo, rēpo, lābor.

Aorist presents.

(*b*) Present stems with weak root (aorist presents) :—corresponding to 6th Sanskrit class, which is oxytone, e. g. *suvá* from √*sū*.

rŭdo, nĭvit (cf. *νῐφετός*), divĭdo, ăgo, ălo, scăbo, fŭrere, tăgo, păgo, scăto, căno, cădo, ŏlo, lŏquor, etc.

Reduplicated presents.

(2) Present stems with *reduplication*. The reduplication is prefixed to the weakest form of the root.

gi-gn-o (Old Latin geno, cf. gen-i-tus), sīdo (for si-sd-o, cf. *ἵζω* for *σι-σδ-ω*), disco (for di-dc-sco, cf. di-dic-i), si-st-o, bi-b-o, se-r-o (for sĭ-s-o). The last three were originally non-thematic; cf. (σ)ί-στα-μι, (σ)ί-(σ)η-μι, Sanskrit *pi-bā-mi* and v. supra, p. 445.

Presents with -*t*.

(3) *T*-Class: the present-stem is formed by adding -*t*-, -*te*- to the verb-stem. The stem is thus often identical with that of the past participle of the simple verb.

Flec-to, pec-to, nec-to, plec-to, vīso (for vīd-to, *M.U.* iv. 77), bē-tere, mĕ-tere (cf. ἀ-μά-ειν, but the relation is obscure), fă-te-or (fā-ri), fă-tiscor (cf. χά-σκω, ad-fă-t-im).

The stem of these verbs seems sometimes to be strong, sometimes weak (cf. făteor but flecto).

Bētere has nothing to do with ἀμφισβητῶ with which it is often compared. The imperfect ἠμφε-σβήτουν shows that in this last the root is σβη, Indo-European *sg-ā́* from a √*sag*, seen in Sanskrit *sajati* (*M. U.* i. 22).

Nasalised presents.

(4) Nasal Class:—

This again may be subdivided into two groups—

Presents with added nasal.

(*a*) Those in which the suffix -*no*, -*ne* is added to the root, originally in its reduced form. These verbs may originally have been non-thematic and correspond to the 5th Sanskrit class of the type *su-nu* from √*su*- and to the Greek forms like στόρ-νυ-μι (cf. *ster-nu-o* : πτάρ-νυ-μαι). But all have passed into the thematic system:—

cer-no (κρί-νω: for -*er*- in Latin, v. p. 192).
ster-no (cf. stra-tus).
sper-no (cf. sprē-tus).
tem-no (tm̥-nó ?).
fruniscor for frŭg-ni-scor, cf. frūg-es.
deguno for de-gus-no, cf. γεύ(σ)ω.

So with the -*n*- assimilated to the preceding consonant we have:—Tollo (tl̥-nó ?), vello, fallo, pello, -cello, cillo, pro-mello. Cf. lĭ-no, sĭ-no.

In old Latin we have *solĭnunt* (cf. λιμπ-άνω), *dă-nunt*, *inser-i-nuntur*.

Presents with inserted nasal.

(*b*) The nasal appears within the body of the root. This mysterious class of verbs corresponds to the Indian 7th class of the type *rundh* √*rudh*. The root appears in the reduced form. In Greek we have the type λα-μ-β-άν-ω √λαβ (p. 416).

In Latin *fĭ-n-do*, *scĭ-n-do*, *pŭ-n-go*, *rŭ-m-po*, *tŭ-n-do*, *jŭ-n-go*, *ă-n-go* (cf. ἄχ-ος), *fŭ-n-gor* (Fick, i. 161), *nĭ-n-guit* (cf. *niv-* √*snĭghu̯-*), *mung-it* (*mūc-us*), *pi-n-go*, etc.

We find nasalised weak and unnasalised strong forms side by side in *meio* (*meih-o*) and *mi-n-go* (cf. ὀ-μίχ-λη), λείπω and *li-n-quo*, ζεύγ-νυ-μι and *jŭ-n-go*, πήγ-νυμι and *păn-go*, νείφει and *nĭ-n-git*, etc.

In the majority of cases the nasal is confined to the pres. system, but in *fungor*, *jungo*, *ango*, etc., it is carried throughout the verbal system.

Inceptive presents.

(5) Inceptive or *sk*-class.

-sco-, *-sce-* is added to the weak root, either:—

Inceptives from simple stems.

(*a*) Immediately to the simple root in--

hi-sco, *pa-sco*, *gli-sco*, *crē-sco* (where the root is *cer-* in *Cer-es* and the long vowel is due to metathesis, cf. p. 115), *disco* (perhaps we may put together *doc-eo*, *dec-et*, *di-dc-sco* as a regular Ablaut), *misceo* (for *mig-sceo*, cf. μίσγειν for μιγ-σκειν (?)), *posco* (for *porc-sco*, *pr̥c-sco*, cf. *proc-us*, *precor*).

Gnā-scor, *gno-sco* are difficult. The full root of *gnosco* is seen in the Gothic *kannen* beside *kunnan* (*kn̥nan*), but in Greek and Latin we get only the metathesised form *gnō-* with a long vowel. A short vowel may, however, be seen in ἀμφι-γνοέω, νοῦς (for *γνοϝος, cf *gnāvus*), *nŏ-ta*, *a-gnĭtus*. In these words, however, the root may be different, and the guttural due to the same confusion that we get in *co-gnōmen* beside *nōmen* (*M. U.* i. 47).

Gnāscor again cannot well be separated from the root γεν in γένος, but a confusion with *gnosco* seems most probable. In Homer we have γνωτός, 'a blood relation,' and γνωτός is to *gnātus* as στρωτός to *strātus*, both apparently showing long sonants (De Sauss. pp. 108, 138). On the other hand we get κασί-γνητος, γνήσιος, etc., with η everywhere in Greek, to which corresponds the Latin *ā* in *gnātus*.

It is possible there may be a triple Ablaut of the √*gnō*, (i) *gnō* in *gnō-sco*; (ii) *gn̥̄* in *gnā-rus*; (iii) *gn̥* in *in-gens* for *n̥-gn̥-tí*, properly 'that which is unknown, unusual' (*K. Z.* xxviii. 281, note).

Inceptives from secondary stems.

(*b*) The suffixes *-sce-*, *-sco-* are added to secondary roots.

(i) To the stems of thematic verbs, *api-scor*, *gemi-sco*, etc.

Tremēsco, (*Aen.* 5. 694) is formed on the analogy of *horrēsco*, *pavēsco*, etc. (*M. U.* iii. 81), which have stems in *ē*.

(ii) To the stems of derived verbs in *-ao*, *-eo*, *-io*, in *con-cupī-sco*, *labā-sco*, *ardē-sco*, *scī-sco*.

Scio (*scī-i̯-o*) is to *scī-sco* as *βαίνω* to *βά-σκω* : so we have *dormio* and *obdormīsco*, *resipio* and *resipīsco*, **apio* (?) and *apīscor*.

The *i* in all these forms is naturally long (cf. Italian *capisco*, which, if the *i* in Latin had been short, would have been *capesco* p. 208, *Z. G. d. P.* 257), and they must consequently be from verbs of the 4th conjugation. Forms like *expergīscor* *pacīscor*, *contremīsco*, etc., where there is no corresponding verb of the 4th conjugation, must be the result of analogy. Finally on the analogy of this class we get those inceptives where the suffix is added to—

Inceptives from stems of nouns.

(iii) The stems of nouns, but with a preceding long vowel which is often not part of the noun-stem proper: *inveterāsco*, *puerāsco*, *ditēsco*, *quiēsco*, *mitēsco*. These are formed as if from a **veterare*, etc., which however does not actually exist.

Contrast the short vowel in the Greek *κορέσκω*, *ἀρέσκω*.

Yod-presents.

(6) The *Yod*-Class of verbs forms its present stem by adding *i̯o*, *i̯e* to the root, which generally appears in the reduced form. Thus—

farc-io, cf. *φράσσω* for *φρακ-i̯ω*.
rug-io, cf. *ῥύζω* for *ῥυγ-i̯ω*.
sal-io, cf. *ἅλλομαι* for *σαλ-i̯ο-μαι*.
ven-io for vm̥-io, cf. *βαίνω*, Indo-European *g-m̥-i̯o*.
mug-io, cf. *μύζω* for *μυγ-i̯ω*.
sario, cf. *σαίρω*.
am-icīre for am-ici̯-ire, cf. iacio, ob-icio.
comperire, beside par-ĕre.
iacio, cf. *ἰάπ-τω* √*i̯aq*.

But the forms *evenat*, *advenat* in Plautus (cf. Brix, *ad Trin.* l. 41) are aorist presents formed with the simple stem.

Under this head must be classed a variety of verbs in *-io*, which may be grouped as follows:—

(i) Radicals, cupio, fugio, fodio, pario, etc.

(ii) Denominatives:—

(*a*) From stems in *-o-*, saevio, servio, largior, etc.

(*b*) From stems in *-a-*, punio, bullio.

(*c*) From stems in *-i-*, vestio, finio, sitio, etc.

(*d*) From stems in *-u-*, singultio.

(*e*) From consonant-stems, custodio, impedio (nutrio?).

But in the inflexion of these words we get a constant confusion between the simple and the derived stems. Thus *cap-is*, *cap-it* (if not for *capi̯-es*, *capi̯-et* as *reîce* for *rei̯ice*) seem to be formed from the simple stem *cap-*, not from the secondary stem *capi-*. On the other hand the stem *saevĭ-*, e.g. in *saevio*, has passed entirely to the 4th conjugation from the analogy of stems in *-ī* like *audī-*.

Generally it is true that the perfect system is formed from the simple, the present system from the derived stem; thus we have *salui* (stem *sal-*), but *salio* (stem *sali-*), *sonui* (stem *son-*), but *sonare* (stem *sonā-*).

But the reverse is the case in *petivi* (stem *petī-*) beside *pet-ĕre* and in *pot-ī-ri* beside *potĭ-tur*. Other verbs in which this confusion of simple stems and stems with i̯ has taken place are *orior*, *morior*, *gradior*, *fodio*, *cupio*. In *parāre* beside *parĕre*, we have two distinct stems from the same root, each with a full verbal system.

Under the head of the *yod*-stems must also be put the whole of the verbs of the so-called first, second, and fourth conjugation, as well as those of the third whose presents end in *-uo*. Thus—

am-o is for amā-i̯o, cf. *τιμά-ω* for *τιμά-ι̯ω*.
mone-o is for monē-i̯o, cf. *φιλέ-ω* for *φιλε-ι̯ω*.
audi-o is for audī-i̯o, cf *κονίω* for *κονῑ-ι̯ω*.
statuo is for statu-i̯o, cf. *μεθύ-ω* for *μεθυ-ι̯ω*.

There are no verbs in *-oo* in Latin corresponding to those in

-οω (*-οι̯ω*) in Greek. In Latin the corresponding forms appear in *-āo*, e. g.—

ψιλόω : pilā-re.
ἀρό-ω : arā-re.
ζευγόω : jugā-re.

aegrōtus looks like a past part. of **aegroo*.

But even in these derived verbs we get a variation of stem in different forms, as in—

viole-ntus and viola-re.
cale-ndae and cala-re.
λοέ-ω and lavā-re or lav-ĕre.
navā-re and navī-re, etc.

Horreo, *torreo*, *madeo*, *oleo* seem to be properly verbs in *-i̯o* or to have had once corresponding forms with *-i̯o* added to the simple stem; cf. Sanskrit *hṛ́sy-ati*, *tṛ́sy-ati*, *mády-ati*, *ὄζω* for *ὀδ-i̯ω* (*Mém. Soc. Ling.* iii. 279).

With regard to the derived verbs in *-eo*, *-io* it may be noticed that they are partly derived from nouns (*flaveo*, *finio*), and partly causative (*moneo*, *sopio*), and that of denominative verbs those in *-eo* are intransitive (e. g. *albeo*), those in *-ao* are transitive (*denso*).

Perfect System.

We now pass to the Perfect system, with which must be classed the system of the Sigmatic Aorist.

The reduplicated Perfect.

The reduplicated perfect, which is characteristic of Greek, is comparatively rare in Latin. The following is a list of those found:—pependi, tetendi, momordi, totondi, spopondi, poposci, didici, cucurri, pupugi, tutudi, scicidi, pepēdi, pepigi, tetigi, cecini, cecīdi, cecĭdi, peperi, fefelli, peperci, ste-t-i, de-d-i, (tetuli), (tetini), bi-b-i, sti-t-i, didici.

The vowel of reduplication.

It may be noticed that reduplication is not peculiar to the perfect system in the verb, but is also found in the present stem. There is, however, this difference, that the vowel in reduplication was originally in the case of the present stem *i* in the case of the perfect, *e* (cf. *τί-θη-μι* but *τέ-θει-κα* *K. Z.* xxv. 32, 74). Forms then like *pu-pug-i* beside *pe-pig-i*, *spo-(s)pondi*, *mo-mordi* beside the older *spepondi*, *memordi* (Aul. Gell. 7. 9) are to be explained as the result of assimilation to the stemvowel, or as Osthoff (*Z. G. d. P.* 271) prefers to say, *momordi*, etc., are formed on the analogy of *pependi*, etc., where the vowel of stem and reduplication happened to be identical. In composition the accent of the perfect was shifted to the prefix, and *ĕ* consequently became *ĭ* (*dédi* but *réddidi*).

It is to be noticed that though under the influence of assimilation we find *i*, *o*, *u* as the vowel of the reduplicated syllable, we never find *a*, as in every case where *a* is the root vowel, it has passed in the unaccented syllable to *e* or *i*, and in this case the *e* of the reduplication is unchanged.

In the case of *didici* (for *dé-dec-i*, from the root *dec*, *doc* in *doceo*) the *ĕ* in the unaccented syllable becomes, as regularly, *ĭ*; but the *i* of the reduplication may be due rather to the vowel in *disco* (for *di-dc-sco*) than to direct assimilation with the *i* of the perfect stem.

Bi-b-i seems to be for *be-b-i* (cf. πέ-πω-κα), as *sti-ti* (which is found) for *ste-ti* (Gell. 2. 14; Neue, ii. 460). The *i* of the reduplication may come from the compounded forms, where it would be unaccented (cf. *plico* for *pleco*, Greek πλέκω, from *ímplico*, etc. *M. U.* iv. 3, note); but it would be helped by the *i* of the present.

Loss of reduplication in Latin.

It would seem from a comparison of Greek and Sanskrit that, except in those stems that began with a vowel, reduplication must once have been universal in the perfect-system. The reasons that caused it generally to disappear in Latin are doubtful, but the following theory has been hazarded.

We have seen that the dual and plural of the active and the whole of the middle voice of the perfect originally accented the termination and therefore took the reduced root. In those cases, however, where the root-syllable, though shortened, yet remained a distinct syllable, the reduplication was, in the dual and plural, one syllable further from the accent than in the singular and therefore lost its vowel. So we get in Sanskrit 1st sing. *ta-tákṣ-a*, 3rd plur. *takṣ-ús*, for *t-takṣ-ús*, and in Latin *fĭdimus* for *f-fid-i-mús*. From *fĭdimus* is then formed a new singular *fĭdi*, while on the other hand *ce-cid-i-mus* will be a new plural on the analogy of *ce-cid-i*. It is supposed that traces of the original reduplication in such types survive in the double consonants of *re-ccidi*, *re-pperi*, *re-ce-cidimus* by loss of the reduplication giving *re-c-cidimus*. In cases like *ja-gm-ús* (3rd plur. act.), the reduplication was protected by the two following consonants and therefore remained. With this we may compare the Latin *fēcimus* for *fe-fc-imús*. Somewhat similar is the loss of the reduplication in the perfects of compound verbs which in the simple form are trisyllabic or in some persons quadrisyllabic, the prefix being originally accented. Thus we have *áttigi, óccurri*, *décidi*, *óccidi*, but *tétigi*, etc. (*Z. G. d. P.* 236). There are some exceptions, especially with the compounds of *curro* (Neue, ii. 466 sqq.).

The theory just given has however been attacked by Osthoff (*M. U.* iv. *Einleit.* p. viii; *Z. G. d. P.* 1, sqq.), largely on the ground of the Gothic 1st plur. *sētum* (√*sed*), which cannot, by the phonetic laws of Gothic, be for *se-st-um*, *se-sd-um*. He prefers to start with two distinct but parallel forms of the 1st plur., a reduplicated form *se-sd-i-mús*, which will answer to the Sk. *sedimá*, and a form with a long root-vowel, *sēd-i-mus*, which gives the Gothic *sētum*. This latter form is of unexplained origin, but it may be remarked that the forms *vidi*, *οἶδα*, *véda* point to an original type of the perfect which was formed without reduplication (see also p. 459). The Latin *sedimus* phonetically may come from either the reduplicated or the non-reduplicated form, but Osthoff gives reasons (p. 105) for preferring to refer it to the latter. Similarly there may have been originally two forms, *be-bhoí̯dh-a* (= *πέ-ποιθα*) and (*bh*)*bhoi̯da* (= Goth. *baid*); in the former the reduplication perhaps bore the secondary accent, while in the latter it was unaccented. With *sēdimus* we may class *vēnimus*, *clēpimus*, from roots *vĕn*, *clĕp*.

The Augmented Perfect.

In Greek, roots beginning with a vowel regularly form the perfect by means of the temporal augment, that is, of the syllabic augment which by a pre-historic contraction has coalesced with the initial vowel of the root. It is possible that traces of this may survive in Latin in the forms *ēgi*, *ēmi*, *ēdi*, *co-ēpi.* In every case it may be noticed that the perfect stem appears in Ablaut II, whereas we should rather have expected (p. 485) Ablaut I (*ĕ-ŏg-i*). But on this point see p. 468.

Perfects formed with internal modification.

We now come to those perfects which are formed by internal modifications of the verbal stem. But we may first briefly notice those internal modifications which accompany reduplication.

(i) Reduplicated Perfects.

Roots of the *ĕ*-series originally showed *ŏ* in the singular of the perfect active. Thus we have *πέ-ποιθα* from √*πειθ* (p. 485). Traces of this original Ablaut may be seen in Latin in—

mo-mord-i from an obsolete pres. **merdo* (cf. *σμερδ-νός*).
to-tond-i „ „ **tendo*.
spo-pondi „ „ **spendo* (*σπένδω*).

It is to be noticed that *spondeo*, *tondeo*, *mordeo* are derived forms, and therefore of secondary origin.

Again, *me-min-it*, *te-tin-it*, *di-dic-it* may possibly be for **mé-mon-it*, *té-ton-it*, *dé-doc-it*, from the roots *men-* (*men-s*), *ten-* (*ten-eo*), *dec-* (*dec-et*). So, too, *pe-pul-i* (for *pe-pol-i*, √*pel-*), (*ce*)-*cul-i* (for *ce-col-i*, √*cel*), *te-tul-i* (for *te-tol-i*, √*tel*). But the last three are more than doubtful, and the vowel change there seems to be due merely to the common change of *el* to *ol* (*ul*) in Latin (p. 189).

(ii) Non-reduplicated Perfects.

The remaining cases of internal modification of the stem often present great difficulties. It will be well briefly to classify our material first, before discussing it in detail.

1. The three roots ending in long vowels, *dā-*, *stā-*, *dhē-*, preserve the original non-thematic forms in *de-dĭ-mus* (to give), *ste-tĭ-mus*, *de-dĭ-mus* (to place, in *ab-do*, etc.), which are for *de-də-mos*, *ste-stă-mos*, *de-dhe-mos* (cf. p. 236).

2. Roots in *ei̯* have the strong stem in the perfect, e. g. *vīdi* (*Ϝείδομαι*), *līqui* (*λείπω*). In the former there is no trace of an original reduplication (cf. *Ϝοῖδα*, *véda*), but to *līqui* correspond in Greek and Sanskrit the reduplicated forms *λέλοιπα*, *riréca*. Contrast *fĭdi*, which we have seen (p. 456) was perhaps once reduplicated, and in which the root only appears with *ĭ*.

3. Roots in *eu̯* similarly have the strong stem without the reduplication (*fūgi* beside *φεύγω*, *fūdi* beside χέϝω). On the other hand, roots that contain only *ŭ* have in the perfect *ŭ* with reduplication (*tu-tŭd-i*, *pu-pŭg-i*).

4. It has been thought that in *pependi*, *tetendi*, *poposci* (for *peporc-sc-i*) we have the reduced form of the root which is appropriate to the plural and has been extended to the singular. These forms would then stand for *pe-pn̥d-i*, *te-tn̥d-i*, *pe-pr̥c-sc-i*; but there are so few certain instances of an Ablaut in inflexion in Latin that it is safer to suppose these to be formed straight from the present stem. *Cucurri* may possibly be for *ke-kr̥r-i*, from a pres. *kerro* (=**querro*, *curro*; cf. *equiria* for *equi-quiria*).

5. The form *sēdimus*, from a root *sĕd-*, we have already seen reason to believe to be primitive (p. 457), and with this we put *vēnimus*, *clēpimus*, from √*vĕn*, √*clĕp*.

6. Finally, we have the roots of which the presents contain *ă* (aorist presents). These form their perfects in three different ways —

(i) With the weak root reduplicated—in *pepigi*, *cecini*, *cecĭdi*, *tetigi*, (v. p. 455).

(ii) With the strong root unreduplicated—*scăbo*, *scābi*.

(iii) With a long *ē* in the stem—*capio*, *cēpi*.

With these last we may class the anomalous forms—fŏdio, fōdi, strīdo, strīdi, cūdo, cūdi, vinco, vīci, īco, īci.

The perfects of the types *scābi*, *cēpi* present great difficulty. The most typical case is that of those verbs whose presents show *ă*, and whose perfects show *ē*. These are—

ēgi, from *ăgo* (an aorist present). This we have already explained by contraction with the augment (p. 457).

frēgi, *pēgi*, from nasalised presents.

cēpi, *fēci*, *jēci*, *co-ēpi* (Lucr. 4. 619), from *yod*-presents.

Now, according to Osthoff's theory (p. 457), *vēnimus*, *clēpimus*, *sēdimus*, beside *vĕnio*, *clĕpo*, *sĕdeo*, represent a comparatively primitive Ablaut. Beside these we have *ēgi* from *ăgo*, whose long vowel may be satisfactorily explained. Osthoff (*Z. G. d. P.* 155, 262) is of opinion that these four forms—all words in constant use—with a short vowel in the present and a long vowel in the perfect, were the models on which all perfects with a long vowel corresponding to presents with a short vowel were formed. We may get other models in *vīdi* (beside *vĭdeo*), which seems primitive (p. 457).

We have therefore the Ablauts—ăgo : ēgi—vĕnio : vēni—clĕpo : clēpi—sĕdeo : sēdi—lĭnquo : līqui—vĭdeo : vīdi. And these may have been sufficient to form the type on which were modelled—*ŏdio : ōdi—căveo : cāvi—făveo : fāvi—scăbo : scābi—lăvo : lāvi—păveo : pāvi—fŏveo : fōvi—fŭgio : fūgi (though this last may perhaps be an original Ablaut, see p. 459), etc.

The remaining perfects, *frēgi*, *pēgi*, *cēpi*, *fēci*, *jēci*, *co-ēpi*, which show a vowel differing in quality as well as quantity from that in the present stem, may be due to the analogy of *ago*, *egi*, but some of them at any rate admit of a different explanation (p. 456).

The Perfect in -*si*.

The last group of perfect-stems in Latin is formed by means of the addition to the root of (i) -*si* or (ii) -*vi*, -*ui*.

We will consider first the Perfect in -*si*, the usual form in roots ending with a guttural, labial, or dental, and occurring in some roots ending with -*s* or -*m* (*premo*, *sumo*, *tem-no*).

It is clear at first sight that the Latin perfect in -*si* closely resembles the Greek sigmatic aorist—that *deic-si*, e. g. is analogous to *ἔ-δεικ-σ-α*. But it is also clear that the person-endings in the two languages are very different.

The whole question has been treated of by Brugmann (*M. U.* iii. 16). His conclusion is, that the suffix -*s*, -*is* is characteristic of the aorist system, and has only got into the perfect by a confusion of the two tenses.

Thus in Greek, *ᾔδε(σ)α* is a sigmatic aorist corresponding to Sk. *ávediṣam*. Its optative is *(Ϝ)ειδε(σ)ίην*, *(Ϝ)ειδε(σ)-ῑ-μεν*, the last form corresponding to Latin perf. subj. *viderīmus*. *Viderĭmus*, which is also found, owes its short *ĭ* to the future perfect. The singular of *viderīmus* should be *veidesiēm*, but the weak optative suffix has been extended throughout, as in *sīm* for and beside *siēm*.

The fut. exactum *videro* (for *veideso*) is in form an aor. subj., corresponding to the Gk. ϝειδέ(σ)ω, Sk. **védiṣā(-ṇi)* (Whitney, *Sk. Gr.* § 906). Then *videris, viderit* will be represented in Sanskrit by the corresponding forms *védiṣas, védiṣat.* In the plural the true forms are *viderĭmus, viderĭtis,* **viderunt.* The two first correspond to Gk. aor. subjunctive of the type φυλάξομεν, with a short thematic vowel. *Viderīmus* is found in this tense, but is due to the optative form (perf. subj.). Similarly *viderint*, the ordinary 3rd plur. fut. pf., is, properly, optative. The true form *viderunt* would correspond to Sk. *védiṣan* (*veid-es-o-nt*).

Accordingly, *videro, viderim* are, properly, aorists subj. and opt., and stand for *veideso, veidesim.*

The Latin 2nd plur. of the perf. ind. *vidis-tis* corresponds to Sk. *ávediṣ-ṭa*, from 1st sing. *ávediṣam*, and is therefore a sigmatic aorist. The 2nd sing. *vidis-ti* has apparently added to the stem of the sigmatic aorist the perfect termination -*ti*. The true aorist form would have been (*e*)*veid-is-s* (Sk. *ávedīs*). By a converse process ἔδειξ-ε has taken the perfect termination, but remained aoristic in sense. The correct form would have been *ἔδεικ-σ-τ.

The 3rd plur. *vid-ĕr-unt* is for *veid-es-n̥t*, but the termination is -*ont* rather than -*ent*, on the analogy of the thematic system, just as *sunt* (*s-n̥t*) is for **sent*, *ed-unt* (*ed-n̥t*) for **edent*, or as in Greek we get εἶπ-ον beside εἶπ-αν. If *vidēre* is for *vid-er-e*(*nt*), it may show the original vowel of the termination, but see p. 466.

Again as by the side of *ero* which is properly subjunctive (Gk. ἔ(σ)ω, ὦ) there existed a future-perfect form *videro*, it was natural that *eram* should produce a form *videram*, and so *vidissem, vidisse* sprang up on the analogy of *essem, esse.* That the pluperf. indic. and subj. and perf. infin. are of comparatively recent origin, is indicated by the fact that they have no corresponding forms in the Italian dialects, which however possess forms analogous to the future perfect and perfect subjunctive.

In the case, then, of the root *vid-* we see throughout a confusion between the sigmatic aorist and the perfect. Other instances of this confusion are plentiful. We may compare *deixi* : ἔδειξα—*pexi* : ἔπεξα—*plexi* : ἔπλεξα— *-lexi* : ἔλεξα—*mansi*, cf. ἔφηνα for ἐφαν-σα—*clau(d)si*, cf. ἔχε(δ)σα, etc.

Similarly *dixo*, *dixim* are conjunctive and optative forms of the sigmatic aorist stem, and are not to be taken as syncopated for **dixiso*, **dixisim*. But from *dixim* was formed *dixem* on the analogy of *amâssem* (which is syncopated from *amavissem*) beside *amassim*.

Amasso and *amassim*, etc., are clearly also conjunctive and optative forms of the sigmatic aorist; but the double *-ss-* is, so far, unexplained, though it seems to find its parallel in Celtic. Whatever the origin of these words may be, they served as the type for *capesso*, *facesso*, etc.

Dixe (Plaut. *ap. Non.* 105. 23) is usually compared with δεῖξαι, but δεικ-σαι is not itself a distinctively aorist form, the σ belonging to the infinitive termination, and -σαι corresponding to *-se* (*-re*) in *es-se*, *da-re*, *fo-re*, *vive-re*. In Greek δεῖξαι only passes into the aorist system from the fact that it contains -σα. More strictly it is a non-thematic present infinitive. Cf. *traxe*, *scripse* (Aen. 5. 786, Auson. *Sap.* 1).

So far we have considered the addition of *-es-* or *-s-* to form the aorist stem as used indifferently. But the only true aorists in Greek in which the addition of *-es-* (as distinct from *-s-*) can be shown to be original are ᾔδ-ε(σ)-α (for ἐ-Ϝειδ-εσ-α) and ᾔ-ε(σ)-α (if this is rightly analysed as ἐ-εἰ̯-εσ-α). In Latin, corresponding to these we have *veid-es-* and *ei-is-* (in *ĭ-er-o*, *ĭ-is-ti*, with dissimilation of the vowels and shortening of the root-diphthong before the following vowel).

We may therefore put together—

veides-	Ϝειδ-εσ-	Sk. *ved-i-ṣ-*.
ei-is-	εἰ-εσ-	„ *ay-iṣ-*.

These two, according to Brugmann, formed the model on which all other forms with the suffix *-es-* were made, e.g. *fu-er-o* (for an earlier **fu-s-o*, Umbrian *fu-s-t*, Greek ἔφυ-σ-α), *habu-er-o*, etc.

On these assumptions the following chronological statement of the history of the Latin perfect in *-si* has been given by Brugmann:—

FIRST PERIOD. *Perfect and Aorist forms distinct.*

In the *perfect*, the 2nd sing. added *-ti* immediately to the stem, the 2nd plur. added *-tis*, *visti*, *vistis* (cf. οἶσ-θα, ἴσ-τε). The perfect subj. must have existed in a form corresponding to the Oscan *fefacid*, Sk. opt. *riricyāt*, *vavṛtyāt* (Whitney, § 812).

Aorist in -is-. *Videro*, *viderim*, *ab-iero*, *-ierim* (subj. and opt.), would be already in existence. The corresponding indicatives would be (*e*)*-veid-is-m̥*, (*e*)*-ei̯-is-m̥*.

Aorist in -s-. The 2nd plur. ending *-tis* was still added to the stem, as *deic-s-tis*. The type *amasso*, *amassim*, and a corresponding indicative (*amassm̥* ?) already existed.

SECOND PERIOD. The distinction of meaning between the perfect and aorist begins to be lost, and *the forms of the aorist in -is- penetrate to the perfect.*

Forms of the type *vidi*, οἶδα, *véda*, take *-is-* permanently in the 2nd sing. and 2nd and 3rd plur., and thus instead of the original 2 sing. and plur. *vis-ti*, *vis-tis* (cf. οἶσ-θα, ἴσ-τε), we get *vidis-ti*, *vidis-tis*. So in the reduplicated perfect stems we get *tu-tud-is-ti*, *te-tond-is-ti*, etc. Forms like *videram*, *vidisse*, *vidissem* arise by the side of *videro*, on the analogy of *eram*, *esse*, *essem* beside *ero*; and then this type is extended to all verbs, and we get *fu-er-o*, *habu-is-se*, etc.

THIRD PERIOD. *The forms of the aorist in -s- penetrate to the perfect system.* *deic-s-tis* produces a singular *deic-s-ti* on the analogy of *vidisti* beside *vidistis*. Then *dixisti*, *dixero*, *dixissem* are produced on the analogy of *vidisti*, *videro*, *vidissem*, the stem being taken as *dix-*, not *dic-*; the forms *dixero*, *dixissem* remain by the side of *dixo*, *dixim*. But *amasso*, *amassim*, *faxo*, *faxim* never passed into the perfect system.

Dixisti (*deic-s-is-ti*) like *dixero* (*deic-s-is-o*) takes the signs both of the *-s-* and of the *-is-* aorist. We may compare for the doubling of the formative suffix the whole group of Sk.

aorists in *-siṣ-* and forms like *dic-ti-ta-re*, *τρί-τα-το-ς*, *βο-σκέ-σκο-ντο* (μ. 355)[1].

The long root vowel of some perfects in *-si* is difficult. Priscian, 9. 28, says, ‘in *-xi* terminantia praeteritum perfectum II^{ndae} et III^{ae} et IV^{tae} conjugationis inveniuntur, et tunc tantum natura quoque producunt paenultimam quando sit *e*, ut *rĕgo*, *rēxi*.’ It is supposed that the *ē* is due to the original non-sigmatic perfect (e. g. **rēgi*, parallel to *sēdi*), of which traces survive in *collēgimus* beside *intelleximus* (*Z. G. d. P.* 113).

So *divīsimus*, *sūximus*, *gēssimus*, etc., which, if sigmatic aorists, at any rate owe their long vowel to the type *sēdi*, *vīdi*.

In some few cases we get true perfect forms preserved side by side with forms containing the aorist *-s-*. Thus *pupugi* and *punxi*, *pepigi* and *panxi*, *peperci* and *parsi*.

Osthoff (*Z. G. d. P.* p. 219) takes *dixem*, *dixe* to be syncopated forms, like *amassem*, *amasse*, by the side of the true aorists *dixo*, *dixim*, and holds that on the analogy of these last were formed *amasso*, *amassim*. Then from *amāsso* : *amāre* would be formed *prohibēsso*, *licēssit* (Neue, ii. 542) : *prohibēre*, *licēre*. Further *lacesso* : *lacuit* (in *e-licuit*) corresponds to *licesso* : *licuit*, and finally *lacio* : *lacesso* corresponds to *facio*, *capio* : *facesso*, *capesso*.

Perfect in *-vi.*

We will now proceed to consider the Latin *perfect in -vi.* This is one of the most difficult questions in all Latin morphology. It has been exhaustively treated by Osthoff, *Z. G. d. P.* p. 251 sqq. His theory is briefly this:—

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[1] The same doubling of a significant element appears in many different languages. We may compare—

plusieurs = pluriores.
mehrere = English mo-re, where mo is already a comparative.
nimmermehr = nie mehr mehr.
gen. plur. uns-(e)r-er, eu-(e)r-er.
gegessen = ge-ge-essen.
ver-fressen = ver-ver-essen.
dédans = de de ante intus.
de devant = de de ab ante.

Vedic vaçâsas for vaçás (stem vaçá).

There are certain Latin perfects in *-vi* (*movi, vovi, cavi, favi, juvi, expavi, lavi*) where the *v* is not formative but an integral part of the verbal-stem. To these correspond past participles where the termination is preceded by a long vowel. On the analogy of this type the perfect in *-vi* was extended to all verbs where the participle was preceded by a long vowel; that is, because *fōvi, mōvi, jūvi*, etc., had participles *fōtus, mōtus, jūtus*, so from the participles *amātus, flētus, scītus, nōtus*, etc., were formed new perfects *amāvi, flēvi, scīvi, nōvi*, etc.

In the case of *cīvi, īvi, quīvi* the past participles are *cĭtus, ĭtus, quĭtus*, but the long vowel of the majority of the rest of the verbal forms caused the new perfects also to take a long vowel. The older perfects are seen in *-cĭi, -ĭi, -quĭi*, which are not to be considered as syncopated forms.

Pāvi is due to the old participle **pā-tus*, with a long vowel as in *pābulum*.

Again the similarity of *sē-men* to *nō-men, flā-men* produced the new perfect *sēvi* as parallel to *nōvi, flāvi*. Then in its turn the paradigm *consēvi, consitus* became a model for *oblēvi, oblĭtus*, and that again for **crĭno, crēvi, *crĭtus*. When in the last case the present *cerno* was adopted from the compound forms *sécerno*, etc., this in its turn became a model for *sperno, sprēvi*.

This theory is worked out by Osthoff with an ingenuity and wealth of illustration to which we cannot do justice here. The objection to it is that it presumes a regular gradation of analogical formations which it is hard to believe in.

A totally new theory has been since put forward by Schulze (*K. Z.* xxviii. 266), who explains the perfect in *-vi* by the amalgamation of the perf. part. with the forms of the substantive verb. He argues as follows:

In Latin the perf. part. neut. of a root *sē* would be represented by **sēves* (compare Greek *εἰδ-Ϝός*, but the *e* is probably the original vowel of the neuter termination, cf. πλεῖν = πλέεν beside πλέον, *K. Z.* xxvi. 329). Similarly we should get a form **amāves*, etc.

Now compounding this as a stable element with the various forms of the root *es* we get—

(i) *sḗves-smos*, *sḗves-stis*, *sḗves-esām*, *sḗves-essem*, *sḗves-eso*. The last three, containing two consecutive syllables identical in form, will lose one (p. 220) and pass into—

(ii) *sḗvesām*, *sḗvessem*, *sḗveso*.

Then the *e* in the unaccented syllable before a double consonant will pass into *i* (contrast *ésse*), and we shall have—

(iii) *sḗvimus*, *sḗvistis*, *sḗveram*, *sḗvissem*, *sḗvero*.

(For *sḗvesmos* becoming *sḗvimus* v. p. 213 and *K. Z.* xxvii. 328.)

It is possible to explain on the same principle the 3rd plur., only we must suppose, as is not in itself improbable, that this form was from the first expressed without the copula, on the model of *hostes victi* for *hostes victi sunt*. For from a masc. nom. sing. *amavēs* we should get a dual *amavēs-e* and a plural *amavēs-es* (cf. *maiōs* : *maiōres*), which would become *amavēre*, **amavēres*. It is noticeable that Quintilian (1. 5. 42) says that some scholars considered *amavēre* as a dual[1]. By the side of these there may have grown up an analogical form *amavĕront* (for *amāvĕsont*), on the model of *amāvī̆mus* (for *amāvĕsmos*).

We should then get side by side—**amavērēs*, *amavēre*, *amavĕront*. The language as developed combined these various forms, and took for 3rd plur. *amavēre*, **amavĕront*, *amavēront*. The long *ē* tended to take the short termination, the short *ĕ* the long termination; cf. *stetēre* but *stetĕrunt*.

The sing. *amavi*, *amavisti*, *amavit* would then be by analogy, though the -*ī* is still unexplained (p. 468).

According therefore to Schulze's theory the perfect in -*vi* is nothing but a *pis aller*, a periphrastic tense substituted for the regular perfect, which for some reason or other had ceased to exist. It is a periphrastic tense, however, in which the first element is stable, and unaffected by all relations of person or number, such periphrastic tenses tending to become crystallised in some one form. Cf. C. Gracchus' *credo ego inimicos hoc dicturum esse.* (Neue, ii. 380.)

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[1] Cf. Neue, ii. 391, who quotes the old authorities for this opinion. Havet (in *Arch. für lat. Lex.* iii. 558) sees a trace of the use as a dual in the didascalia to Terence, e. g. *fecere Q. Fabius Maximus P. Cornelius Africanus* in that of the Adelphi.

The Perfect in -*ui*.

From the perfects in -*vi* cannot well be separated the forms in -*ui*. We may distinguish two sets of cases—

(i) Those in which the *u* belongs to the verb-stem.

(ii) Those in which the *u* is confined to the perfect.

(i) Root verbs like *ruo*, *nuo*, *pluit*, *luo* naturally make the perfects by the addition of the suffix -*i*, and so we get *rui*, *nui*, **plui*, *lui*, etc. On these are modelled the denominatives of the type *metuo*, *metui*, and also those verbs forming the present stem by the addition of the suffix -*nu* (fifth Sanskrit class), as *mi-nu-o*, *ster-nu-o* (cf. πτάρ-νυ-μαι). The long vowel of the Old Latin *fūit*, *plūit* (Neue, ii. 497, 597) is on the analogy of *lĕgo* : *lēgi*, *ĕmo* : *ēmi*, etc.

(ii) In other cases -*ui* may be derived from older -*vi*.

The perfects of the type *genui* correspond always to a participle in -*ĭtus* (*genĭtus*, older **genetus*, cf. γενετή, *genetivus*, *genetrix*). This participle would naturally correspond to a perfect **génĕ-vī*, which by the laws of Latin phonology would become **génŏ-vi* and *génui* (cf. *dénuō* for **dénŏvo*, *vídua* for *vídŏva*, ἠ-Fίθ-εF-ος).

Again *dómĭtus* will represent an older *dómătos* (cf. ἀ-δάματος), whence was formed *domui* on the analogy of the type *genitus* : *genui*.

Then *domāre* : *domui* would be the model of *necare* : *necui* (though *enectus*), *secare* : *secui* (though *sectus*), also *monēre* : *monui*, of *docēre* : *docui* (though *doctus*), and *genĕre* : *genui*, of *serere* : *serui* (though *exsertus*), *canĕre* : *canui* (Neue, ii. 476) (though *cantus*), *velle* : *volui* (though there is no supine and the infin. is different). Further from *elicio*, *elicui*, *elicitus* we may get *rapio*, *rapui* (though *raptus*), and *sapio*, *sapui* (though no supine). Finally the *yod*-verbs with infinitives in -*ĕre* may have influenced those with infinitives in -*īre*, and so we get *aperui*, *salui*, *amicui* (*Z. G. d. P.* 253 sq.).

Posui may have originated from an idea that the participle was *pos-itus* not *po-situs*, whence *pos-ui* was formed as *dom-itus* from *dom-ui*. The truer perf. appears in *posivi*.

The Inflexion of the Perfect.

The great question in the inflexion of the perfect is the final -*ī* of the 1st sing. It is quite clear that this can have nothing to do with the -*ă* of the corresponding Greek and Sanskrit forms. It is however identified by Osthoff (*Z. G. d. P.* 191) with the Sanskrit -*é* of the perfect middle; so *tutudi* = Sanskrit *tutudé*, *scicidi* = *ci-cchid-é*, *dedi* = *dadé*, *steti* = *ta-sthé*, *reliqui* = *riricé*, *vidi* = *vividé*. There is no difficulty as far as meaning goes in the middle form; *sedi*, Sanskrit *sedé*, may be 'I have seated myself.' Compare the Greek *ἧμαι*, *ἧσται*, *πεφυγμένος*, etc.

But what is this original diphthong? The Slavonic languages show that it cannot be *ei*; it might be *oi* (cf. *is-ti* beside *τοί*), but is more probably -*ai* (cf. Sanskrit -*se*, -*te* = Greek -*σαι*, -*ται*). That *ai* in an unaccented syllable may become in Latin *ī* is proved by *quaero* : *cónquīro*; *ménsais* = *ménsīs* (cf. Osc. *diumpais*) *sī*, Osc. *svae*; *hum-ī*, *χαμ-αί*, etc.

The original paradigm from the √*vid*- would seem to have been—

1st sing. *veida* 2nd sing. *voista* 3rd sing. *voide*.
Plur. *vĭdmus* *vistis*.
Middle *vĭdai* *vissai*.

We have already seen that in *ĕ*-stems the characteristic vowel of the perf. sing. is *ŏ* (p. 419). But it is possible that *ĕ* always appeared in the 1st person, for Vedic Sanskrit here always shows *ă* in an open syllable (*cakára*, *jagáma*), whereas the representative of European *ŏ* in an open syllable is *ā* (De Sauss. p. 72; *Z. G. d. P.* 61). If this is so, we should have primitive I.-E. *veida*, *voista*. The *ŏ* is extended in Greek (*οἶδα*, *οἶσθα*), the *ĕ* in Latin (*veida*, *veista*); -*ta* in *veis-ta* stands for -*tha* after the sibilant.

The middle 2nd pers. *vissai* became *vis-tai* on the analogy of the active, and then -*di*- was inserted on the analogy of *vi-di*, *vi-di-mus*, etc., and we get *vi-di-sti* (cf. *ἀρυνάσι* for **ἄρασι* on analogy of *ἀρυ-ός*). In this way the *s* of *vidisti*, *vidistis* came to be considered as belonging to the termination, though really part of the stem (but see p. 461).

The 3rd sing. seems to have originally ended in *-ē̆t* (cf. *fuē̆t*, *dedē̆t*, Neue, ii. 442), perhaps on the analogy of *siē̆t*, *ponebāt*, etc. The *i* of the classical 3rd pers. would come from 1st sing.

The other forms have been considered above.

The Future and Imperfect in *b*.

On the fut. and impf. in *-b-* there is nothing to be said. The future in *-b-* has a corresponding form in Celtic, and forms a strong argument for closely connecting the Italian and Celtic families. The imperf. in *-b-* is a unique formation, peculiar to the Latin language.

The traditional explanation is that the *-b-* is a relic of the √*bhŭ*, and that *arē-bo*=*áre-bhṷō*, where *arē* may conceivably be an infinitive form, such as is supposed to survive in Lucretius, *facit arē* (6. 962). But this is not satisfactory, even if we go on to connect *-bam* of impf. for *bhṷām* with ἐ-φύη-ν. Nothing approaching to a solution has yet been discovered.

We may now go on to discuss the theory of the Latin moods, so far as they have not been dealt with already.

The Conjunctive.

The only conjunctive of the non-thematic system surviving in Latin is the form *ero* for **eso*, beside the Greek ἔ(σ)ω ὦ, Sanskrit *as-ā-(ni)*. Of this we have spoken above (p. 447).

In the thematic conjugation the characteristic vowel of the present subjunctive is *ā*. Thus in Indo-European we should have an indic. *bhér-e-ti*, a conj. *bhér-ā-ti*, to which last corresponds Latin *ferāt*. It may be noticed that the Ablaut *ŏ*, *ĕ* (indic.) : *ā* (conj.) is identical with that of *ekṷo-*, *ekṷe-* (masc.) : *ekṷā-* (fem.). (*M. U.* ii. 124.)

In the aor. subj. on the other hand the thematic vowel is *ŏ*, *ĕ*, which is kept in *videro*, etc., the subj. of the sigmatic aorist; cf. Greek φυλάξομεν, etc. (v. p. 461).

The Optative.

The mood-sign of the optative of non-thematic verbs is in the singular *-iē̆-*, in the plural, where the accent rests on the person-ending, *-ī-* (*K. Z.* xxiv. 303). In thematic verbs the mood-sign is *-i-*.

Thus the primitive inflexion of the optative of the root *es-* was—

Sing.		*s-iḗ-m*	*s-iḗ-s*	*s-iḗ-t.*
	Greek	ἐ(σ)-ίη-ν	ἐ(σ)-ίη-ς	ἐ(σ)-ίη-(τ).
	Latin	*s-iē-m*	*s-iē-s*	*s-iē-t.*
	Sanskrit	*s-yā́-m*	*s-yā́-s*	*s-yā́-t.*
Plur.		*s-ī-mós*	*s-ī-té*	*s-ī-nt.*
	Greek	ἐ(σ)-ῖ-μεν	ἐ(σ)-ῖ-τε	ἐ(σ)-ῖ-(εν).
	Latin	*s-ī-mus*	*s-ī-tis*	*s-ī-nt.*

The weak form has been universalised in the classical Latin *sīm*, *sīs*, *sīt* (*sĭt*).

Precisely similar are *vel-ī-m*, *nol-ī-m*, *māl-i-m*, *ed-ī-m*, *du-ī-m* (cf. δο-ῖ-μεν).

Forms like *dēmus*, *stēmus*, *ferēmus* (which though used as a future is clearly similar to the other two) are doubtful. It is not easy to see how *demus*, *stemus* can have originated from **dă-ī-mus*, **stă-ī-mus* (δοῖμεν, σταῖμεν). In *ferēmus* it is possible we may go back to a form *fer-o-ĭ-mus* (cf. φέρ-ο-ι-μεν), where for *oi* passing into *ē* we may compare *ploirumē* (Inscr.) for *plurimi*, *plurimoi*. But here *oi* is final, and in the same word we have a medial *oi* which does not become *e*.

On the whole no explanation yet given can be considered satisfactory. But the fact that Cato uses *ferem*, *audiem* seems to show that the *e* is at any rate not due to the final *ā* of the stem of the 1st conjugation. The Oscan termination of pres. conj. of 1st conjugation is *-aiem*, *-ait*, *-aid* (Neue, ii. 443).

Forms like *faxim*, *viderim* have been given above.

The 'imperfect subjunctives' of non-thematic verbs, *dărem*, *fŏrem*, *stārem*, seem to have been originally formed from the stem of the sigmatic aorist, on the analogy of *s-iē-m*, to which they owe their *ē*, which in this case has been extended to the plural (*darēmus* for *də-s-ē-mus*). We should expect a long vowel in the singular, a short vowel in the plural, and this seems to be indicated by the varying quantity of *dărem* and *stārem*, of which the latter represents the singular, the former the plural form of the root.

The Imperative.

We may now pass on to the system of the Imperative. All imperatives in Latin, with the single exception of *memento* (*me-mn̥-tṓd*), are formed from the present stem. We have therefore nothing answering to the aor. imper. of Greek.

The ordinary 2nd sing. imperative of thematic verbs consists simply of the theme with *-ĕ* as the thematic vowel. Thus *reg-e*, *amā* (*ama-i̯-e*), etc. The long vowels of *stā*, *dā*, *ī*, may be on the analogy of the imperatives of the thematic system. *Nolī* may possibly owe its *ī* to the conjunctive (optative) form *nolīm*.

On the other forms of the imperative we may refer to what has been said on p. 433. If what is there remarked is correct, we must allow free play to analogy in the various persons, numbers, and tenses of this mood. *Vehunto* will be formed from *vehito* on the analogy of *vehunt* beside *vehit*, and *vehitote* on the analogy of *vehite* (injunctive in origin), beside *vehe*.

The forms *stamino*, *famino* will not then (as Corssen thought) be singulars of *famini*, etc., standing for **faminos*, but be new formations on the analogy of *stato*, etc., just as the new Greek middle imperatives φερέσθω, φέρεσθε, φερέσθων are formed simply on the analogy of the actives φέρετε, φερέτω, φερόντων.

The 2nd sing. of the passive imperative is identical with the present infinitive active. It has been thought to be in origin identical with the Greek middle forms, and *sequere* has been compared to ἕπου (ἕπεσο). The difficulty in this case is the final *-ĕ* in Latin, which can hardly represent an original *-ŏ*. We may draw attention to the similar case in Greek, where the 1st aor. infin. act. and imperative middle are identical in form, though not in accent.

The 2nd plur. imper., as has been remarked above, is nothing but a participial form, used apparently as an exclamation (λεγόμενοι, *legimini*). The 3rd sing. and plur. are simply the corresponding active forms with the addition of the passive suffix *-r*. But that this was not always a necessary addition is proved by the forms *nitito*, *censento* quoted p. 434. (*M. U.* i. 163; iii. 1; *K. Z.* xxvii. 172.)

The Infinitive.

The termination of the infinitive is clearly *-se*, which after vowels becomes of course *-re*. So we get *es-se*, *vel-le* (for *vel-se*, as *collum* for **col-sum*), *fer-re*, *dă-re*, *age-re*, etc. Paul. *Fest.* 68. 13 preserves the *-s-* between vowels in *dasi* for *dari*.

The final *-e* of the infinitive in Latin is perhaps sometimes long (though most of the instances have been altered by the editors), and the corresponding form in Greek shows the diphthong *-αι*. It is probable therefore that here as elsewhere we get a confusion between the functions of the dative and the locative, so that *viverē* will be a dative corresponding to Sk. *jīvaṣé* (I.-E. *gigu̯e-saí*), *viverĕ*, a locative, standing for *vive-sĭ*, with the final *-ĭ* becoming *-ĕ*, as in *marĕ* for **marĭ*. The same confusion may possibly be seen in Greek, where we have *δόμεναι* (dative) and *δόμεν* (said to be for *δόμεν-ι*, locative) (cf. p. 438).

It would seem that the infinitive passive is absolutely identical with the corresponding active form with *ē*: *monerē* and *monerī* are only different ways of writing the same word; and we find *fiere* (insc. *fierei*) beside *fieri* (Neue, ii. 334). Eventually one form was in practice appropriated to the active, the other to the middle, but no difference can be supposed to exist in the origin of the two forms. And indeed in itself the infinitive is neither active nor passive, its meaning in any given passage being determined by the context. It is equally possible to say *θαῦμα ἰδεῖν* and *θαῦμα ἰδέσθαι*.

It would seem, however, that some infinitives ended originally not in *-se* but in *-e*. In Latin we get *calē-facio*, *madē-facio*, which seem to be equivalent to *calēre facio*, etc.; and the Lucretian *facit arē* (6. 964) is made much more intelligible if we can suppose *arē* to be an old infinitive. Now in the Veda we get forms like *áje* (Whitney, *Sk. Gr.* § 970 a), which correspond to a Latin **agē* or *agī*. We should then get a distinction drawn similar to that between *monere* and *moneri*, so that *age-re* would be used actively, *agi* passively.

The passive infinitive in *-ier* has never yet been satisfactorily explained, but it may possibly be the ordinary infinitive in *i* with the addition of the suffix *-ere* of the thematic verbs. Thus *laudari-er(e)* would take the infinitive suffix twice over, and thus be parallel to forms like *dic-s-is-ti*, etc., quoted on p. 463. The final *-e* might easily be lost, as it is in the nom. sing. of neuter stems in *al(i)-*, *ar(i)-* (e.g. *calcar* and *calcare*). It is possible that the form was invented as an expedient to distinguish between the active and passive significations of the infinitive, before *laudare* and *laudarī* were differentiated. When this latter distinction was established, the form in *-ier* became obsolete.

The Participles.

The participles do not present any special difficulty in Latin.

In the present participle active the termination in its threefold Ablaut is *-ont-*, *-ent-*, *-n̥t-*, the last two coalescing in Latin. The weaker form has universally prevailed, as the strong form in Greek, except in *e-untis* (*ei̯-ont-is*), *flex-unt-es*, *sontem*, *insontem*.

Of the perfect paritciple active no certain instance exists (but cf. p. 465), for we can hardly venture to see such a form in *papāver* (*pa-pa-u̯es*), *cadā-ver*.

The future participle is a form peculiar to Latin, but clearly formed from the strong stem of the *nomina agentis* in *-tor*; cf. *dătōr* beside *dă-tū-rus*.

The present participle passive is only preserved as the form of the 2nd plural of the passive voice, but the termination is the same as appears in the triple Ablaut *-mon-*, *-mĕn-*, (*mn*) *-mn̥-*, *ali-mōnium*, *ali-mentum* (*mn̥*), *alu-mn-us*, and numerous other nominal forms (v. p. 300; *M. U.* ii. 185, sqq.).

The past participle in *-tós* is universally used for the passive participle and supine. Originally it carried the accent as in Greek, and was added to the weak stem, as in *dă-tus*, *stă-tus* (*stāre*), *ră-tus* (*rē-ri*), etc. But in the vast majority of cases the strong stem has penetrated to this form; *tentus* would seem to be for *tn̥tús* (cf. τατός), but in *occultus* the *ul* (*ol*) may be due not to an Ablaut but to the regular change of *el* to *ol* before every consonant but *l*.

For the apparent alternation with *-só-s* v. p. 209.

Mortuus is of course not a participle, strictly speaking, but an adjective, and answers to the Sk. *mṛtvá*.

The Gerundive, or *Participium Necessitatis*, as it has been called, is formed, as shown above (p. 216), by the addition of the suffix *-no* to the stem of the pres. part. active. Thus *amandus* is for *amant-no-s*, and the suffix is the same as we get in the Sanskrit participles in *-ná* (Whitney, § 957) and in the Greek adjectives σεμ-νός, ἁγ-νός, etc.

APPENDIX I.

On the two Degrees of the Reduced Root.

The theory of the two degrees of the reduced root was first worked out by Osthoff (*M. U.* iv. 1 sqq.), who shows, by an exhaustive collection of instances, that the semivowels *i*, *u* vary in quantity throughout all the Indo-European languages so universally that it is impossible to believe that the variation does not represent an original difference. That this difference is due to the presence or absence of the secondary accent is a mere hypothesis, but the difference between strong and reduced roots being recognised as due to a difference of accentuation, we are introducing no new hypothesis in connecting the difference between two degrees of the reduced root with a variation in accentuation. A variation of quantity such as we find in *excĭtus* by the side of *excītus* cannot be due to mere accident, and in supposing the difference to be due to a difference of accentuation we are only imagining the operation of a cause which is known to be operative elsewhere. The consonantal form of the long semivowels is obtained from a consideration of the Sanskrit. There we find from a root *prai̯- prī-ta* by the side of *priy-á* (I.-E. *prii̯-*), and by the side of *bhrū́s* (Gk. ὀ-φρύς) a genitive *bhruv-ás* (Gk. ὀ-φρύϝ-ος, I.-E. *bhruu̯-ós*), etc.

The liquid and nasal sonants we have already seen to be treated in other cases exactly like the semivowels i̯, u̯, and we are therefore justified in supposing that they too once appeared in a different form under the secondary accent to that which they take when entirely unaccented; and this supposition is borne out by the very different representations of these sounds in the derived languages. To *ī*, *ū* will correspond *r̥̄*, *l̥̄*, *m̥̄*, *n̥̄* before consonants; to *ii̯*, *uu̯* will correspond *r̥r*, *l̥l*, *m̥m*, *n̥n* before sonants.

For instance—

gm̥- is seen in Sk. *ga-tá*, Gk. *βατός*, Lat. *ven-tus*,
I.-E. *gm̥-tós*, O. H. G. *kun-f-t*.
gm̥m- in Sk. *gám-anti*, O. H. G. *kom-an*.
gm̥̄ in Sk. *á-gā-t*, Gk. *ἔ-βā-τε*.

Similarly *str̥-* appears in *στρα-τός*.
str̥r- in Sk. *ti-stir-é*.
str̥̄- in Gk. *στρωτός*, Lat. *strā-tus*.

Notice that in Sanskrit *r̥r*, *l̥l* are represented by *ĭr*, *ŭr* ,but *r̥̄*, *l̥̄* by *īr*, *ūr*.

But for a fuller account of the representation of the various forms in the different languages see p. 234.

Osthoff has worked out the theory of the two forms of the reduced Ablaut as far as regards semivowels in *M. U.* iv. 280, 353.

(i) Indo-European *ī*, *ū* originated from *ei̯*, *oi̯*, *ai̯*, *eu̯*, *ou̯*, *au̯*, *i̯e*, *i̯o*, *i̯u*, *u̯e*, *u̯o*, *u̯u* occurring before consonants in unaccented syllables, the vowel of the combination being assimilated to the semivowel.

Thus *u̯ei̯dtos* became *u̯ii̯dtos* and then *u̯īdtós*.
k̂leu̯tós *k̂luu̯tós* *k̂lūtós*.

(ii) *ī*, *ū*, so produced, remained long when bearing the secondary accent, but when, owing to their position in the sentence or by composition, they ceased to bear this accent, they sank to *ĭ*, *ŭ*. Hence *klūtós* and *k̂lŭtós* are both possible forms, but the first occurred only at the beginning of a sentence or clause or immediately after an unaccented syllable.

Thus *u̯ei̯kétai̯ kleu̯tós* became *u̯ìketi klŭ̀tós* (where ̀ represents the secondary accent).

But *so kleu̯tós* became *só klŭtós* or *sò klŭtós*; so *énklŭtos* (*inclŭtus*), *pérìklŭtòs* (*περίκλῠτος*).

(iii) To *ī*, *ū* before consonants correspond *ii̯*, *uu̯* before vowels, the same assimilation taking place; but the two sounds are not contracted to *ī*, *ū*, because owing to the following vowel the second element necessarily remains consonantal. These forms occur under the secondary accent.

(iv) To *ĭ*, *ŭ* before consonants correspond *i̯*, *u̯* before vowels. These forms originate from *ii̯*, *uu̯*, as *ĭ*, *ŭ* from *ī*, *ū*, only here the element lost is sonant. They would occur in unaccented syllables.

Thus with the original doublets *dùu̯ó*, *du̯ó* and *sùu̯*, *su̯* we get—

Ablaut III. *δύϝ-ο*, *δυϝώδεκα*, *duo*, Sk. *duvā́*, *duvā́daça*.
Ablaut IV. *δϝώδεκα*, *δϝοιός*, *bis* (*du̯is*), Sk. *dvā́*, *dvā́daça*, Germ. *zw-ei*, Engl. *tw-o*.
Ablaut III. *ὑός*, *συός* (for *συϝός*).
Ablaut IV. *σϝ-ίαλος*, A.-S. *sv-în*, Lat. *su-īnus*.

APPENDIX II.

VOWEL-GRADATION IN NOMINAL AND VERBAL FORMATIONS.

IT will hardly have escaped observation in the list of Ablauts given in the pages of Chap. X that the degree in which any root, in any instance, appears is connected with the particular suffixes by which the root is followed. Thus we have *ὄχος*, *τόκος*, *ψόγος*, *λόγος*, *νόμος*, etc., formed from the roots *ἐχ*, *τεκ*, *ψεγ*, etc., appearing with the masculine suffix *-ος* and the first Ablaut. On the other hand with the neuter suffix *-ος* we have the second Ablaut, as in *ἔπος*, *λέχος*, *μένος*, *γένος*, *βέλος*, *τεῖχος*.

The following tables show the various Ablauts under which a root appears in verbs and nouns in Greek and Latin, according to the nature of the formative suffix. In every case it is to be noticed that a variation in Ablaut is accompanied by a variation in accentuation. Theoretically we must suppose that in the original language the stronger form of the root (Ablauts I and II) only appeared where the accent was on the root, the weaker forms (Ablauts III, IV) only where the accent was on the suffix. But as a matter of fact we find that in many cases the original accent has been superseded in Greek by a secondary accent, and of the original accent no trace is left.

The lists are taken from De Saussure, p. 228, etc., and Bloomfield in the *American Journal of Philology*, i. 314.

A. *Nominal Formations.*

(1) *Themes in -o* (*masc.*), *-ā* (*fem.*).

(*a*) Oxytone forms with strong root (Ablaut I).
Adjectives—*θοός*, *λοιπός*, *τομός*, *ὁλκός* (de Sauss., p. 79).
Nomina agentis—*κλοπός*, *τροφός*, *πομπός*, *ἀοιδός*.

Names of concrete objects and abstract nouns—λοπός, νομός, λοιγός.

But paroxytone or otherwise accented are—πόκος, τόκος, ζόφος, νόμος, (πεντηκόντορος, v. p. 273), στοῖχος, λόγος, φόνος, στόλος, etc.

Forms from the long-vowel series variously accented—μῶκος (μεμηκώς), πτωχός ($\surd$ πτᾱκ, πτήσσω), θόωκος (θαάσσω), ὠμός (cf. *ăm-arus* ?), ψῶχος (ψήχω, ψᾱκτήρ), ὠκύς (cf. *ācer* ?, ἀκ-ωκ-ή), cf. ἀγ-ωγ-ός.

The relation of ὦνος, ὠνή to *vēnum* is not clear (De Sauss. p. 155).

We must specially notice here the difference between the dissyllabic *nomina agentis* which are oxytone (φορός) and the corresponding passive forms, which are paroxytone (φόρος). The question is discussed in the chapter on accentuation (p. 274).

In Latin we find a few traces of this formation, in *mod-us* (μέδω), *proc-us* (*precor*), *rog-us* (*rego*), *tog-a* (τέγω), Old Latin (*s*)*tonum* (cf. στόνος, στένω). The ablative *pondo* (beside *pendo*) points to an old neuter **pondum*.

(*b*) Oxytone forms with reduced root (Ablaut III)—ταρσός (τερσ-), στραβός (στρεφ-), ἀγός (cf. ἀγωγός), ζυγόν, etc.

With a shifting of the accent on to the root—στίβος, στίχος, τύκος, etc.

This form is specially common in compounds—δύσ-χιμ-ος, νεο-γν-ός, δί-φρ-ος, ἀ-τραπ-ός, ἔπι-πλ-α (πέλλα, *pellis*), ζα-βρ-ός (βορά), cf. *privi-gn-us*, *abie-gn-us*, etc.

Exceptional forms with the middle root (Ablaut II) are λευκ-ός, Δελφοί, φειδός, ἔργον (cf. ὄργανον).

The feminines formed by suffix -*ā* are of three types:—

(i) Oxytone, Ablaut I—δοχή, στολή, σπονδή, σπουδή, etc.; with long vowel κυματ-ωγ-ή, λωβή (*lābes*), paroxytone κώπη (*căpio*).

(ii) Paroxytone, Ablaut II—εἴλη, ἔρση, εἴρη, ἐρείκη, λεύκη, πέδη, σκέπη, στέγη, χλεύη, etc.

(iii) Oxytone, Ablaut III—βαφή, γραφή, κοπή, ταφή, φυγή, ὁμοκλή, ἐπιβλαί (Hesych.), ῥαφή. With shifting of accent—βλάβη, δίκη, λύπη, μάχη, σάγη, μεσό-δμη, etc.

(2) *Themes in -mo, -mā.*

(*a*) Strong root (Ablaut I), accent doubtful—οἶμος, ὄλμος, ὅρμος, κορμός, λοιμός ($\surd$ *slei*), τόλμη, πότμος, ὁρμή, πλοχμός.

The root of λοιμός is *slei* or *srei*, in ἀ-(σ)λοι-τός, ἀ-λι-τεῖν, ἀ-λίθιος, ἀ-λεί-της.

With amplified terminations we have γόν-ι-μος, μόρσιμος, τρόφιμος, φθόριμος, σπόριμος, πλόκαμος, οὐλαμός (√ϝελ-), ποταμός (√πετ- in πίπτω), κοι-μά-ομαι (√κει-).

With a long vowel—ῥωχμός (√ῥηγ-), βωμός, ψωμός, θωμός.

In Latin we have *forma* (*fer-o*), *formus* (but θερμός).

Irregular are—ἀγερμός, κεῦθμος, δειμός.

(*b*) Reduced root, oxytone—ἀκμή, πυγμή, στιγμή, ἐρυγμός (τῑμή ?), λιχμάω.

(3) *Themes in -ro, -rā.*

(*a*) Strong root, varying accent—χώρα, ψώρα, σφοδρός (beside σφεδανός), ὠχρός (beside ἀχλύς). Cf. φοβ-ε-ρός, τρομ-ε-ρός, πλοκερός.

(*b*) Reduced root, oxytone — πικρός, λιβρός, ψυδρός, λυγρός (√*leugh-*), σαπρός, μᾰκρός (μάκιστος), λάθρα, ἐρυθρός. Cf. τακερός, παγερός, ἄκρος (accent misplaced).

Of special Greek formation are the oxytone stems in -αδ, with a strong root—δρομάς, ὀλκάς, νομάς, σποράς, Στροφάδες, δορκάς, etc.; but the reduced root appears in φυγάς, νιφάς, μιγάς.

(4) *Themes in -to, -ta.*

(i) Paroxytone (feminines oxytone) with strong root—οἶτος (εἶ-μι), κοῖτος, νόστος, κόντος (κέντρον), χόρτος (cf. *hortus*, εὐ-χερ-ής), βρον-τή, ἀορτή (ἀείρω).

(ii) Oxytone, reduced root (past participles)—δαρτός, καρτός, πάμφθαρτος, φατός, τατός, βατός, δοτός, ποτός, στρατός, etc.

So σπάρτον beside σπεῖρα.

In Latin we can hardly be sure of an Ablaut in these cases. *Perculsus*, *pulsus*, *volsus* may owe their form to the special laws governing *-el-* in Latin; *tentus*, *ventus*, etc., may represent *tn̥tus*, etc., but may also contain the middle Ablaut of the pres. stem. So *com-mentus* : αὐτό-ματος. But we get the reduced root in *stătus*, *dătus*, *rătus*, *cătus*, *sătus*, *făteor*, *nătare*.

In roots containing *e* between two consonants, and not containing a semivowel, the reduced form cannot exist; so we get ἑκτός, λεκτός, πεπτός, etc.

Forms like φευκτός, ἄδερκτος, πᾱκτός, ἄωτος (ἄημι), take the middle root, on the analogy of the other forms; so too δεικτέον, ἄζευκτος, etc.

(5) *Themes in -no, -na.*

(*a*) Paroxytone, strong root—ὄρφνη (√ἐρεφ), θρόνος (for *θόρνος, cf. θόρναξ), √θερ- in θέλυμνον, ἀθερίζειν (Curt. *G. E.* p. 257, etc.), ποινή, oxytone, is an exception.

οἶνος, ὕπνος, ὄκνος are doubtful; **vīnum*, if not borrowed, must go back to **veinum ; som-nus, sopor* are for *su̯epnos, su̯epor ;* ὄκνος (ὄ-κν-ος) has been connected with *cun-c-ta-ri.*

τέχνη, φέρνη, ἔεδνα are exceptions. So σεμ-νός.

(*b*) Oxytone, reduced root—σπαρνός; but especially seen in Indian participles in *-ná.*

τέκνον is shown by Germ. *þeg-ná* to have been originally oxytone; but as it cannot lose its vowel, it may be regular, except in accent.

There is no Ablaut in the Latin *signum* (*seq-*), *tignum, lignum, rēg-num, dig-nus* (√*dek*).

(6) *Themes in -so.* Strong root—τόξον, κορσός, λοξός (cf. *luxus* λικριφίς, but λέχρις). Cf. *noxa* (*neco*), and perhaps δόξα (cf. δοκέω, *doceo, dec-et*).

(7) *Themes in -en.* Oxytone with reduced root—φρ-ήν, πολύ-ϝρ-ην, ἄρσ-ην (Sk. *vṛ́ṣan,* with misplaced accent).

But λειχήν, πευθήν with middle root and τερήν paroxytone.

(8) *Themes in -ανο, -ανη, -ονη* take the strong or middle root—ἑδανός, σφεδανός, στεγανός, σκέπανον, δρέπανον, λείψανον, σφενδόνη, βελόνη, ἀμπεχόνη. Cf. the type τέμενος. But also ὄργανον, ζόϝανον, πόπανον, χόϝανος, ὀρφανός, οὐρανός, ὀρκάνη, ῥυδανός.

(9) *Themes in -on.* Oxytone with reduced root, as κύων, which was originally oxytone. Cf. Sk. *cván.*

But many show the middle root—εἰκών, σκάπων, μάκων, ἀηδών, ἀρηγών.

(10) *Themes in -men.* Oxytone, reduced root, ἀυτμήν, λῐμήν πυθμήν, ὑμήν.

Here we may put the neuter words with suffix -μα (*-mn̥*), which are paroxytone with middle root—βλέμμα, θρέμμα, πεῖσμα (πενθ-μα), σέλμα, σπέρμα, φθέγμα, δεῖμα, χεῖμα, ζεῦγμα, ῥεῦμα, etc.

Often there is a corresponding form in -μος with the strong root —e. g. φλογμός beside φλέγμα.

οἶμα will be on the analogy of οἶμος. δῶμα, σῶμα are obscure.

Latin has *seg-men, ger(b)-men, teg-men, lu(c)-men, ter-men.* In *culmen,* for **celmen, el* becomes *ul* regularly.

With a long vowel we have βᾶμα, σᾶμα, σύστᾱμα, λῆμμα, δῆγμα, δρᾶμα, πῆγμα, πῶμα (also πόμα)—in Latin *stāmen, grāmen, lāmina, effāmen, sufflāmen.*

(11) *Themes in -mon.* Middle root; accentuation irregular—κευθμών, λειμών, χειμών, πλεύμων, τέρμων, στήμων, τλάμων, ἀνείμων. Cf.

τερ-ά-μων, *τελ-α-μών*—*φλεγ-μονή*, *βέλ-ε-μν-ον*. In Latin we have *ser-mo*, *ter-mo*, *tē-mo*, (**tec-mo*).

(12) *Themes in -er.* Oxytone, weak root—*ἀ-ν-ήρ* (cf. *N-er-o*), *αἰθήρ* (*ᾶ-ήρ*), *σπινθήρ*.

(13) *Themes in -ter.*

(*a*) Oxytone, reduced root—*ἀ-σ-τήρ* (cf. stella=s-ter-la), *πα-τήρ*, *θυγάτηρ* (?).

(*b*) *Nomina agentis*, oxytone, middle root—*θελκτήρ*, *θρεπτήρ*, *στρεπτήρ*, *ζευκτήρ*, *πειστήρ*, *γενετήρ*, *ψεύστειρα*.

With these we may put the forms in *-της* which are paroxytone, with middle root—*νεφεληγερέτης*, *ἐρέτης*, *κλέπτης*, *ψεύστης*, *αὐθ-έν-της*, *Θερσίτης*, *πεύστης*.

Also the neuters in *-τρ-ον*—*λέκτρον*, *κέντρον*, *φέρτρον*, *θρέπτρον*, *τέρετρον*, etc.

But the whole group is difficult. Originally there seem to have existed two groups of *nomina agentis* in Greek, in *-τήρ* and *-τωρ* (De Sauss. p. 212), the former oxytone, the latter paroxytone. The first of these was early confused with the names of relationship in *-τήρ* like *πατήρ*. With the oxytone termination *-τήρ* we should expect the reduced root, which in fact we get in *δοτήρ* beside *δώτωρ*. On the other hand there is a great group of oxytone forms with middle roots like *θελκτήρ*.

Further we find a variation of the accentuation of such words in Sanskrit according to the part they play in the sentence; and the old word of relationship *mātā́r* is oxytone, but with a middle root, while the corresponding *bhrā́tār* (*φράτηρ*) is paroxytone, and this is proved in both cases to have been the original accent by the German *modér* beside *brṓþor*.

In Latin again we mostly find the termination *-tor*, but with the middle root—(*vector*, *lector*, *sector*, *emptor*, *genitor*), but also *dător*, *stător* (*stātor*), *păter* but *māter*, *frāter*; while *soror* (*sụesor*), Sk. *svásar* has the termination *-or* (De Sauss. p. 230).

On the whole question, which can partly be explained by the Ablaut of inflexion, see p. 297.

(14) *Themes in -or.*

(*a*) Oxytone, weak root—*ᾰ-ορ* (*n̥σ-ορ*, *ens-is* ?), Sk. *dv-ár-as* (nom. plur.), of which the strong form appears in *fŏr-es* (Brugm. *Stud.* ix. 395).

(*b*) Paroxytone, middle root—*sụésor*, Sk. *svásar*, Lat. *soror*, Gk.

ἔορες· προσήκοντες, συγγενεῖς (for σϝεσ-ορ-). The u̯ appears in εὐρέσφι· γυναιξίν (Hesych.).

(15) *Themes in -i.*

These mostly take the strong root and are paroxytone—στρόφις, τρόχις, μόμφις, χρόμις, τρόφις, δρόμις, μόλπις, φρόνις. Cf. φόρμι-γξ. In Latin we have *extorris.*

But in Sk. *así*, Latin *ensis*, we seem to have the reduced root n̥s-í. (Cf. ἄορ=n̥σ-ορ.)

(16) *Themes in -ti of the weak inflexion* (see p. 291).

The root is reduced, but the accent in Greek is invariably paroxytone, and in Sk. and German only sometimes oxytone. Still it is thought that this last is the primitive accent.

στάσις, κάρσις, τάσις, ἀνδροκτα-σί-η, βάσις, φάτις, χάτις, δόσις, πόσις, Latin *for-tis* (*fer-ox*), *sor-(ti-)s* (*prae-ser-ti-m*), *stătio, rătio, affătim.*

But θέσις, δέσις, ἔφεσις (where the vowel cannot fall), ἄμ-πω-τις, δῶ-τις, φεῦξις (also φύξις), πεῦσις (also πύστις).

In compounds we have ἐγερσι-μάχης, θελξί-νοος, etc.

(17) *Themes in -eu of the weak inflexion.*

(*a*) Oxytone, reduced root—βραδύς (*mṛdús*), παχύς (cf. *pinguis*), πλατύς (*pṛthús*), ἐλαχύς (*levis, raghús*), δασύς (*den-sus*), βαθύς (βένθος), ταχύς, γλυκύς (cf. γλεῦκος), θρασύς, βραχύς (*brevis*), κρατύς, ταρφύς, βαρύς (*gravis*), πολύς (*purús=pṛrú-s*) τανύ-πτερος (*tenuis*).

Notice that this form only occurs in stems containing a liquid or a nasal.

(*b*) Paroxytone, strong root—κρόκυς, κόρθυς, *domus* (δέμω).

Compare the neuters γόνυ (*genu*), δόρυ (δέρω).

(18) *Themes in -eu of the strong inflexion*—Oxytone, reduced root (?)—Ζεύς (*Di̯-ēú-s-*), βοῦς (*gō-eú-s*), ναῦς (*nā-eú-s*).

But these being monosyllabic, the Ablaut of the stem will vary according to the case; v. p. 328.

Of special Greek formation are the oxytone stems in *-eu* with a strong root—στροφεύς, δρομεύς, τοκεύς, τομεύς, νομεύς, φονεύς, φορεύς, κλοπεύς, γονεύς. στιβεύς, however, has a weak root.

(19) *Themes in -t(e)u.*

(*a*) Oxytone, reduced root—*por-tu-s* and the corresponding subst. of the 4th declension formed from the past participle.

(*b*) Paroxytone, strong root—οἰ-σύ-α.

(20) *Themes in -es* (Greek and Latin nom. sing. is in -ος) are formed with the middle root, paroxytone.

Substantives—*γένος, ἔπος, νέφος, ἔτος, ἕδος, μέρος, θέρος, κέρδος, βλέπος, ἕλκος, ζεῦγος, τεῖχος, εἶδος, κλέος*, etc.

In Latin *genus, nemus, ulcus* (for *u̯elcos*), *jūger-um, decus, tempus, holus* (cf. *helusa*, so that *-ol-* is from original *-el-*), *scelus*; cf. *gloria* (for **cleu̯es-ia*), perhaps *Venus*, and compare *vetus*; *pondus, foedus* exceptionally show Ablaut I (De Sauss. p. 79).

Adjectives—*εὐμενής, ἀσπερχές, εὐγενής, ἀτενής, Ἐτεοκλῆς*. To these correspond in Latin the adjectives in *-ĕr* from an original *-ēs*, which have taken the *r* of the oblique cases. Cf. *degener* : *εὐγενής*. The *-s* is however kept in the nom. in *Cerēs, pubēs, impubēs*.

(21) *Themes in -os* (second series).

These are words of the type Sk. *uṣás, bhiyás*, Gk. *ἠώς, ψευδής*. Brugmann (*K. Z.* xxiv. 14) has shown these to be originally neuters, which have reverted to the masc. or fem. declensions. The new declension is of the type *αὐσώς*, acc. *αὐσόσα*, voc. *αὖσος* or *αὖσες*, loc. *αὐσέσι*, gen. *αὐσεσός*, Sanskrit *uṣā́s, uṣā́sam, uṣási, uṣásas*.

(22) *Themes in i̯os, u̯os* (*K. Z.* xxiv. 54, 69, 98).

The suffix *-i̯os* added to the root of an adj. in the middle degree gives the comparative in Sk. (Whitney, *Sk. Gr.* § 463), the addition of *-ta* to this suffix in its reduced form gives the superl. (Whitney, § 467), but the root vowel is not weakened in the superlative.

Thus we have

Positive (*urú*)	Compar. *vár-īyas*	Superl. *vár-iṣ-ṭha.*
(*kṣiprá*)	*kṣép-īyas*	*kṣep-iṣ-ṭha.*

So in Greek from the root *φερ-*, we get *φέρ-ισ-τος*, from *κερδ-* *κέρδ-ισ-τος* with middle roots; in comparatives *μεί-ων* (*μῐ-νύ-ς*), *κρείσσων* (*κρατῡ́ς*), *ὀλείζων* (*ὀλῑ́γος*), *θᾶσσον* (*τᾰχύς*), *μείζων, μᾶσσον* (*μᾰκρός*), *μᾶλλον* (*μᾰ́λα*), cf. *μᾱ́κιστος*. (*K. Z.* xxiii. 126.) The same cause may explain *ē* in the much disputed *pējor*.

The suffix *-u̯os* is seen in the perfect participle active and in some adjectives (De Sauss. pp. 71, 155).

The perf. participle is regularly formed with the weak root of the verb and is oxytone. Cf. Sk. *ca-kṛ-vā́n*, where *-n* is secondary. So in Greek we get *ἰδ-υῖα, ἀνηνεχυῖαν* (*ἐνήνοχα*, the *ε* cannot fall out altogether), *συνειλεχώς* (*εἴλοχα*). This weak Ablaut is regularly preserved in the feminines in Homer. Cf. *λελᾰκυῖαι, μεμᾰκυῖαι, τεθᾰλυῖα, ἀρᾰρυῖα, σεσᾰρυῖα* (*σεσᾱρώς*); *κεκᾰφηώς* (*κέκηφε*). In the masculine, however, the strong Ablaut is generally preserved.

We have in the perf. part. a double Ablaut of stem and suffix, e. g.

masc. *u̯ei̯d-u̯os*, fem. *u̯id-us-ī-a*. The masc. nom. regularly has the suffix vowel long and this is extended to the oblique cases in the Homeric *τε-τριγ-ῶτ-ας*, *βε-βα-ῶτ-α*.

(23) *Themes in -om.* Oxytone, weak root—*χθ-ών* (Sk. *kṣ-am*), *χιών* (*hiems*, Sk. *hí-m-ā*).

(24) *Themes in -n̥t.*

The suffix is accented and has no vowel, the root is weak. The type of this class is *s-n̥t* (*K. Z.* xxiii. 579).

(25) *Root themes.*

(*a*) Weak roots appearing in all cases, and independently of the inflexion. When they terminate in a semivowel (*i*, *u*, *r*, *l*, *m*, *n*) the theme in declension is increased by *-t*. Such themes are *ἀλκ-ί*, *Ἅ-ϝιδ-*, *σύ-ζυγ-*, *ἀντηρίδ-*, *ἐπηλύδ-*, *ju-dic-*, etc. (De Sauss. p. 202.)

(*b*) Themes in which the weak root appears only in the weak cases of the inflexion.

As a type we may take Sk. *vṛtra-han*, acc. *vṛtra-hán̥-am*, dat. *vṛtra-ghn-é*, which would correspond to a Greek type *Βελλερο-φῶν* (where the accent is unexplained), gen. *-φατός*. This last form does not appear, the word having been assimilated to the stems in *-οντ-*, but we see the weak root in *Περσέφαττα* (De Sauss. p. 27).

B. *The Ablaut in Verbal Formations and Inflexion.*

I. *Forms with Ablaut II.*

(1) In the case of non-thematic presents (Hindoo second or *ad*-class), where the present stem is identical with the root, the accent in the singular of the active rested on the root, which therefore took the strong degree (Ablaut II). In the plural and dual of the active and the whole of the middle voice the accent rested on the termination, and the root was consequently reduced.

Thus *εἶ-μι* *εἶ-ς* *εἶσι* *ἴμεν* *ἴτε* *ἴ-ασι*.
Sk. *é-mi* *é-ṣi* *é-ti* *i-más* *i-thá* *y-ánti*.
So *ἐσ-μί* (*εἰμί*) *ἐσ-σί* *ἐσ-τί* (*σ*)-*έντι* (Dor.)
Sk. *ás-mi* *á-si* *ás-ti* *s-más* *s-thá* *s-ánti*.
(e)-sum e(s)-s es-t s-u-mus (estis) s-unt.
And from √ĕd ed-s (ēs) ed-t (est); cf. *ἔδ-μεναι*.

In the long vowel series we get—

τί-θη-μι *δίδωμι* *ἵστᾱμι* beside *τίθεμεν* *δίδομεν* *ἵστᾰμεν*.
φᾱ-μί (*φῄς*) *φᾱ-σί* *φᾰ-μέν* *φᾰ-τε*.

κεῖται is irregular as containing a strong root in the middle voice, but the same irregularity appears in Sanskrit *çéte* (Whitney, *Sk. Gr.* § 629).

στεῦται (Γ. 83) and σεῦται, or rather σοῦται (Soph. *Trach.* 654), seem to be contracted forms of a thematic verb (Curt. *Verb.* i. 154).

(2) Thematic presents, active and middle, of the Hindoo first or *bhū*-class, in the active and middle have Ablaut II, e.g.:—

ἔχω φέρω δέρκομαι φεύγω λήθω τήκω ἥδομαι.
*lego rego tremo dūco clēpo uro (*euso) dīco.*

Full lists in Curt. *Verb.* i. 210 sq.

(3) Verbs of the *Yod*-class (Hindoo fourth or *div*-class) take properly Ablaut III, e.g. βαίνω for *gm̥i̯ō*, but in Greek many are found with Ablaut II, e.g. πέσσω (πεq̯i̯ω), χεϝίω, τέλλω, φθείρω, στέλλω, κτείνω, etc.

(4) The future system has Ablaut II throughout, ἔσομαι, κείσομαι, στελῶ, δερῶ, πλεύσομαι, λείψω, etc.

(5) The sigmatic aor. active and middle has Ablaut II, ἔλεξα, ἔδειξα, ἔρρευσα, ἔφθειρα (for *ἔφθερσα), etc.

(6) The weak aor. pass. is a formation peculiar to Greek and is made with Ablaut II. On the other hand the strong aor. shows Ablaut III.

Compare ἐκέρθην ἐκάρην, ἐζεύχθην ἐζύγην, ἐκλέφθην ἐκλάπην, ἐστρέφθην ἐστράφην, ἐθρέφθην ἐτράφην, ἐτήχθην ἐτάκην. Exceptions to this rule are ἐτύχθην, ἐμίχθην, ἐκρῖθην, ἐστάθην, ἐσύθην, ἐχύθην, as well as ἐβλήθην, ἐτμήθην, etc.

Forms like ἐτράφθην ἐστράφθην in Doric are the result of dialectical peculiarities.

II. *Forms with Ablaut I.*

(1) In the original language the singular of the perfect active was accented on the root, the dual and plural and the whole middle voice on the termination. The singular active accordingly took a strong Ablaut and preferred Ablaut I, the other forms took the reduced root.

Traces of this original Ablaut are to be seen in ἔοικα, ἔικτον—οἶδα, ἴδμεν—μέμονα, μέμαμεν—γέγονα, γέγαμεν—λέληθα (for *λελωθα?) λέλἄσται, etc.

In practice, however, the strong form prevailed all through the active, though many instances of the weak form predominating are also found, especially with perfects in *-κα*, *ἔφθαρκα*, *κέκαρκα*, *ἔσταλκα*, *ἀλήλιφα*, etc.

ŏ (*ō*) seems the characteristic vowel of the perfect, but though *ο* in Greek is fairly common (see list in Curt. *Verb.* ii. 188), *ω* is rare (*ἔρρωγα*, etc.), and *ου* only found in *εἰλήλουθα*.

But traces of *ω* in a verb that elsewhere has *η* (*ε*) are seen in *ἀφέωκα*, *ἀνέωνται*, quoted as perfects of *ἵημι*. (Cf. *ἀφέωνται*, found in the New Testament.)

In Latin we have *momordi*, *tetondi*, *spepondi*, from old presents **merdo*, **tendo*, **spendo*.

(2) Derived verbs in *-eo* take Ablaut I.

ὀχέω, *πορέω*, *φονέω*, *φορέω*, *τρομέω*, *τροφέω*, *ὀρχέομαι* : cf. *βε-βόλη-μαι*, *με-μόρη-ται*, *ἀπεκτόνηκα*, *δομή-τωρ*, *σπορητός*.

In Latin we have *doceo* (√*dec*), *moneo*, *noceo*, *tondeo*, *spondeo*.

C. *Forms with Ablaut III.*

(1) For the non-thematic pres. system v. supra. We may add *ἰ-οίην*, *ἰ-όντος*, (*σ*)*-όντος* (*s-ontis*), (*σ*)*-ετ-έος*, *φᾰ-ίη-ν*, *φᾰ́-ναι*, *φᾰ́-μενος*, etc.

(2) For plural, etc., of perf. system v. supra.

(3) Reduplicated thematic presents (Hindoo third or *hū*-class) take the weakest form of the root.

τίκτω for *τι-τκ-ω*, *γί-γν-ομαι* (cf. *gigno*), (*σ*)*ί-σχ-ω*, *πί-πτ-ω*, *μί-μν-ω*, *ἵζω* (for *σι-σδ-ω*), *sīdo* (*si-sd-o*), *disco* (*di-dc-sco*), etc.

(4) Inchoative forms add *-σκω* immediately to the weakest root. *βά-σκω* (*βη̥-*), *πάσχω* (*πη̥-*), *μίσγω* (*μιγ-σκω*), *ἴσκω* (*ϝικ-σκω*), *φᾰ́σκω*, *λᾰ́σκω* (*λακ-σκω*), *χάσκω* (*χη̥-σκω*); cf. *posco* (*pr̥c-sco*), *disco*, *misceo* (*mig-sceo*), etc.

(5) Comparatively few presents in *ιω* are formed from the weakest root in Greek, though this is historically the correct form; but we find *καίνω*, *μαίνομαι*, *φαίνω*, *πταίρω*, *βάλλω*, *βαίνω*, *πάλλω*, *τιταίνω*.

The Sanskrit *hŕṣyati*, *tŕṣyati* seem to show that *horreo* (for **horseo*), *torreo* (for **torseo*, cf. *to*(*r*)*s-tus*) belong to this group rather than to the forms in *-eo*.

(6) Sanskrit verbs of the 5th and 8th classes (formed by adding *-nu* or *-u* to the stem) have this Ablaut, e. g. *su-nu-* from √*su*, *tanu* (*tn̥-nu*) from √*tan*. But these two types are originally identical. The 8th class (which adds *-u*) is, with one exception

only, formed from roots ending in *-n* (Whitney, *Sk. Gr.* § 603, iv. b), and *tanómi* goes back to *tṇ-nó-mi*, just as *sunómi* to *su-nó-mi* (*K. Z.* xxiv. 288).

In Greek we have *πτάρ-νυ-μαι*, *τά-νυ-ται* (*τῄ-νυ-ται*), *ἄγ-νυ-μι*, *μίγ-νυ-μι*, *ἄ-νυ-ται* (cf. *αὐθ-έν-της*), and passing into the thematic class *ἀ-νύ-ω*, *τα-νύ-ω*. But *δείκ-νυμι*, *ζεύγνυμι* have strong roots.

With other nasal formations, but the same weak degree of the root, *ἱκ-άν-ω*, *ἁμαρτ-άνω*, *δαρθ-άνω*, *α-ὐξ-άνω* (cf. *ἀ-ϝέξ-ω*), etc.

With a double nasal (Hindoo 7th or *rudh*-class) we have *θι-γ-γ-άνω*, *λι-μ-π-άνω*, *τυ-γ-χ-άνω*, *πυ-ν-θ-άνομαι*, *λα-γ-χ-άνω*, *χα-ν-δ-άνω*, *λα-μ-β-άνω*, *ἁ-ν-δ-άνω*, *μα-ν-θ-άνω*, *λα-ν-θ-άνω*.

With a nasal followed by *i̯*, *ἐρῠθαίνω*, *μαρ-αίνω*, *ἀλιτ-αίνω*, *α-ὐ-αίνω* (√*εὐσ-*, *ὑσ-* in *ūro*=**euso*), *τε-τρ-αίνω*.

In Latin *fi-n-do*, *sci-n-do*, *fi-n-go*, *ru-m-po*, *tu-n-do*, *li-n-quo*, *ju-n-go*. But in Latin we only have the inserted nasal, not the nasal suffix.

(7) The non-thematic strong aorist is properly an imperfect from a non-thematic present, *ἐ-πτά-μην* being related to a possible **πτᾰ-μαι* as *ἱστά-μην* is to *ἵστᾰ-μαι*. Accordingly, in agreement with the general theory of such forms, we get a strong root in the singular indic. of the active, a weak root in the other numbers and moods of the active and throughout the middle (De Sauss. pp. 21, 128, 146).

Thus we find in Greek *ἐπτ-ἄμην* beside *ἔπτη-ν*, *βᾰ-ίη-ν* beside *ἔβη-ν*, *ἔτλᾰν*, *τλᾰίην* beside *ἔτλην*, as well as *ἐ-χῠ́-μην*, *ἔ-σσῠ-το*, *κλῠ́-μενος*, *ἀπο-ύρ-ας* (beside *ἀπό-ϝερ-σε*), *ἔκτᾰ-το*, *ἀπέφᾰ-το*, etc.

But in the singular of the active we have *ἔ-χευ-α*, *ἔσσευ-α*, cf. *ἠλευ-ά-μην*. The *-α* of the first person represents an original *ṃ*, and the old inflexion was of the type **ἔ-χευ-ṃ*, **ἔ-χευ-ς*, **ἔ-χευ-τ*, **ἔ-χυ-μεν*. In later times however, owing to the final *-α*, they have been assimilated to the type of the sigmatic aorist, and the strong form has become predominant in all numbers and voices.

(8) The thematic strong aor. is an imperfect from a thematic pres., which had the accent on the thematic vowel (Whitney, *Sk. Gr.* §§ 751, 846). As the accent comes after the root, the root is consequently reduced; but the original accent is only preserved in Greek in the infinitive and participle.

Thus we have *ἔ-σχ-ον*, *ἔ-σπ-ον* (beside *ἕπω*, *in-sec-e*), *ἔκλυ-ον*, *ἔ-πταρ-ον*, *ἀγρ-όμενος*, *ἔ-πιθ-ον*, *ἐπυθ-όμην*, *ἔ-δραμ-ον*, *ἔ-λαθ-ον*, *ἔ-λακ-ον*, διέτμᾰγ-ον. Reduplicated forms, ἤνεγκον (ἠ-νε-νκ-ον), ἔειπον (ἐ-ϝε-ϝπ-ον), ἐ-κε-κλ-ό-μην, ἔ-πε-φν-ον, λε-λᾰθ-ό-μην.

Irregular are ἀγερέσθαι (beside ἀγρόμενος), ὤφελον (beside ὦφλον).

(9) The strong aor. pass. takes Ablaut III, ἐρρύ-ην, ἐ-σσύ-ην, ἐ-μίγ-ην, ἐ-τᾰ́κ-ην, ἐ-σᾰ́π-ην.

Irregular are ἐφλέγην, ἐπλέκην (also ἐπλᾰ́κην), ἐτέρσην.

(10) It has been already explained that the perfect system takes a strong Ablaut in the sing. indic. act., a weak Ablaut elsewhere. The following is a list of the known instances:—

Weak forms.	Strong forms.
ἔ-ικ-τον, ἐ-ίκ-την, ἔ-ικ-το, ἤ-ικ-το	ἔ-οικ-α.
ἐ-πέ-πιθ-μεν	πέ-ποιθ-α.
ἴσ-τον, ἴδ-μεν, ἴσ-τε	οἶδ-α.
δεί-δι-μεν, ἐ-δε-δί-την, δε-δι-ώς	δέ-δοι-κα.
ἐλ-ηλύθ-αμεν	εἰλ-ήλουθ-α.
γέ-γα-μεν, γε-γα-ώς	γέ-γον-α.
μέ-μα-μεν, με-μα-ώς	μέ-μον-α.
πέ-πασ-θε[1], πε-παθ-υῖα	πέ-πονθ-α.
τε-τλᾰ́-μεν, τε-τλᾰ-ίην	τέ-τλη-κα.
κέ-κρᾰχ-θι	κέ-κρᾱγ-α.
ἔ-στᾰ-τον, ἔ-στᾰ-μεν	ἕ-στη-κα.
δε-δᾰ-υῖα	δέ-δη-ε.
με-μᾰκ-υῖα	με-μηκ-ώς.
τε-θαλ-υῖα	τέ-θηλ-α.
λε-λᾰκ-υῖα	λέ-ληκ-α.
σε-σᾰρ-υῖα	σε-σηρ-ώς.
ἀρ-ᾰρ-υῖα	ἀρ-ηρ-ώς.

The middle forms are more common, εἶμαι (ϝε-ϝσ-μαι beside ϝέσ-σα), κέ-κλῐμ-αι, ἔ-σσῠ-μαι, κέ-χῠ-μαι, εἵ-μαρ-ται, ἔμβραται (for ἐ-σμρ̥-ται), ἔ-φθαρ-μαι, ἔ-σπαρ-μαι, δέ-δαρ-μαι, κέ-καρ-μαι, πέ-παρ-μαι, τέ-ταλ-μαι, ἔ-σταλ-μαι, τέ-τα-μαι, πέ-φα-ται, ἀλ-ήλιμ-μαι, ἐρ-ήριγ-μαι, ἐρ-ήριμ-μαι, μέ-μιγ-μαι, τέ-τυγ-μαι, πέ-φυγ-μαι, πέ-πυσ-μαι, ἔ-στραμ-μαι, τέ-τραμ-μαι, τέ-θραμ-μαι, λέ-λᾰσ-μαι, πέ-πο-ται, πέ-φαν-ται.

In some roots the reduced Ablaut cannot or does not in any form appear, as in ἔ-ζεσ-μαι, λέ-λεγ-μαι, ἐν-ήνεγ-μαι, and on the analogy of these are modelled the new forms βέ-βρεγ-μαι, κέ-κλεμ-μαι, πέ-φλεγ-μαι, ἔ-ζευγ-μαι, δέ-δειγ-μαι, λέ-λειμ-μαι, etc., with strong instead of reduced roots.

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[1] Written πέποσθε in many texts of Homer; cf. Monro, *H. G.* § 225.

I.

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